UNIVERSITY OF ALBERTA

EXAMINING THE SOCIAL ECOLOGY OF ADOLESCENTS ENGAGED IN RISKYSEXUAL INTERCOURSE

BY

SHEENA GEORGE ©

A thesis submitted to the Faculty of Graduate Studies and Research in partial fulfillment of the requirements for the degree of

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IN

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DEPARTMENT OF HUMAN ECOLOGY

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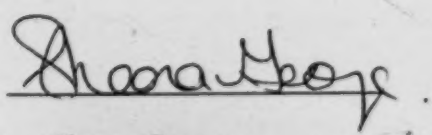

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled **EXAMINING THE SOCIAL ECOLOGY OF ADOLESCENTS ENGAGED IN RISKY SEXUAL INTERCOURSE** submitted by **Sheena George** in partial fulfillment of the requirements for the degree of **Master of Science** in Family Ecology and Practice.

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DATE Aug 20/02

Black Bird

Blackbird singing in
The dead of night
Take these broken wings
And learn to fly
All your life
You were only waiting
For this moment to arise
Blackbird singing in
The dead of night
Take these sunken eyes
And learn to see
All your life
You were only waiting
For this moment to be free

Blackbird, fly
Blackbird, fly
Into the light of
A dark black night

Artist: THE BEATLES
Album: The White Album

Abstract

Within this research, risk factors associated with risky adolescent sexual intercourse behaviours were examined. The risk factors chosen come from three adolescent social contexts: family, peers and school. The risk factors were low parental monitoring, low parental support, high peer encouragement of risky behaviour, low peer support for no sex, low school goals, and low school grades (GPA). These risk factors were analyzed in relationship to risky adolescent sexual intercourse, which was defined by not using a condom, engaging in sex at an early age, or having multiple sexual partners. Analysis was guided by Bronfenbrenner's *Ecology Theory*. This theorist emphasizes the importance of interpreting human behaviour in the context of the social settings in which these behaviours occur. Results show that there are multiple pathways to risky sexual intercourse. These results are discussed in an attempt to better target programs towards teens at greatest risk.

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Dedication

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CHAPTER ONE:

INTRODUCTION

Important life transformations occur during adolescence. This is the period in which individuals move into adulthood. Adolescence is a life stage characterised by emotional, physical, and biological changes (Adams, 2000). The journey towards adulthood signifies a time when youth initiate participation in adult behaviours and activities such as sexual intercourse. For some teenagers, adolescence represents a vulnerable time with the potential to engage in high-risk sexual behaviours (Gans, Blythe, Elster & Gaveras, 1990; Hechinger, 1992; National Commission on the Role of School and Community in Improving Adolescent Health, 1990, as cited in Barone et al., 1995).

This century has been marked by drastic changes concerning sexuality and sexual behaviours for the adolescent population in North America (Adams, 2000). Teens are far more likely to engage in sex before they finish high school now than they were two decades ago. Recent data indicate that approximately 25% of Canadians will have had sexual intercourse by the age of 16 (McKay, 2000), with the majority of young Canadians initiating sexual intercourse between 16 and 19 years of age (Maticka-Tyndale, 1997). Not only are more teenagers becoming sexually active, but they are also engaging in risky sexual intercourse behaviours. These risky behaviours have long-term repercussions affecting both physical and mental health.

Previous researchers have defined risky adolescent sexual intercourse as multiple partnering, no condom use and early age of first intercourse (Moore et al., 1998; Wellings, Field, Johnson & Wadsworth, 1994; Wellings & Mitchell, 1998). "Multiple,

partnering is not an uncommon phenomena among young people, and if not accompanied by safe sex practices, becomes a risk factor for sexually transmissible diseases, including HIV/AIDS" (Moore, Manlove & Glei, 1998, p. 51). Adolescent multiple partnering has been related to relationship infidelity. Approximately 40% of sexually active teens state that they would be unfaithful to their sexual partner (Buzwell, Rosenthal, & Moore, 1992).

Within the Canadian National Population Health Survey (1996) it was found that 29.4% of males, 15-19 years of age, had more than one sexual partner in the past 12 months. Females within the same age range had lower rates, with 21.8% reporting more than one sexual partner (Maticka-Tyndale, Barrett & McKay, 2000). Furthermore, adolescents with multiple sexual partners appear to be compounding their risks by also being more likely to: 1) have sex for the first time before the age of 13, 2) not have used a condom the last time and 3) consumed alcohol or drugs before having sex the last time (Canadian Association for Adolescent Health, 1992).

While researchers in the 1990's have indicated that more teens use condoms (CDC, 2001), condoms are still not used consistently (Health Canada, 1999; Moore & Rosenthal, 1998; Rosenthal & Reichler, 1994). Thus, the positive trend towards increased contraceptive use is overshadowed by its inconsistent use (Moore & Rosenthal, 1998). When Canadian adolescents were asked if they used condoms sometimes or each time, 19% of males and 32% of females (age 15-19) stated they used condoms sometimes. Sixty-six percent of males (age 15-19) and 47% of females (age 15-19) reported using condoms each time. Thus, a higher percentage of females reported inconsistent condom use (Maticka-Tyndale, 1997).

Furthermore, sexually active adolescents have the highest age specific rates for a myriad of STDs (Kowaleski-Jones & Mott, 1998). For example, in the United States 1 in 4 sexually experienced teens acquire an STD (Alan Guttmacher Institute, 1994). When compared to all other age categories in the United States, 15-19 year-olds had the highest rate of gonorrhea in 1998 (Kowaleski-Jones & Mott, 1999).

In the Canadian population, adolescents represent the group most affected by the STD, Chlamydia (Health Canada Laboratory Centers for Disease Control, 1999). Consequences associated with the transmission of some STDs include reduced fertility, reproductive tract cancer and adverse pregnancy outcomes (Department of Health and Human Services, 1995). More Canadian research on risky sex is needed to further develop strategies to combat the rise of STDs in the Canadian adolescent population (McKay, 2000; Maticka-Tyndale et al., 2000).

Many adolescents also engage in high-risk sexual behaviours associated with the transmission of the human immunodeficiency virus (HIV; (D'Angelo et al., 1990; Diclemente, 1990). Canadian data indicates that adolescents (age 15-19) represent 1.5% of the reported acquired immunodeficiency syndrome (AIDS) cases, substantiating that sexually active youth are at risk for HIV infection (Health Canada Laboratory Centers for Disease Control, 1999). Since HIV/AIDS can have a long incubation period, appearing only in adulthood, it is possible that the percent of HIV/AIDS contracted in adolescents could be much higher than 1.5% (Soren, 1995). In fact, "[w]hen examined by age group, the proportion of females among adult AIDS cases is highest among those aged 15-29 years. …this proportion has increased from 14.6% in the period between November 1985 and December 1995 to 44.5% in 2001" (Health Canada, 2002, p.2).

The definition of early age of first sexual intercourse has varied depending on the study reviewed. Some researchers state that early sexual debut occurs at age 13, (Canadian Association for Adolescent Health, 1992) while others state it is age 15 (Singh & Darroch, 1999). According to the Canadian National Population Health Survey (1994-1995), 20% of adolescent males (age 15-19) had their first sexual intercourse at 13. For adolescent females (age 15-19), 10% reported early sexual debut at the age of 13. Another 20% of males and 28% of females had their first sexual debut at age 15 (Maticka-Tyndale, 1997).

The conceptual framework uniquely suited for the investigation of adolescent risky sexual intercourse is Bronfenbrenner's Ecology Theory (1979). The premise of this theory is that human behaviour is best understood by examining interactions within multiple contexts. Contexts refer to the social settings in which adolescents interact, such as the family, peer group, school, neighbourhood and work place. In this research study, the terms setting and social context are used interchangeably. This researcher examined three social contexts, family, peers, and school. The adolescent development literature verifies that the family context, peer group and school setting are three major adolescent social contexts. These contexts also act as key socialization agents (Bibby & Posterski, 1992; Health Canada, 1999; Ryan, Adams, Gullota, Weissberg & Hampton, 1995; Steinberg, 1999).

Previous researchers have indicated that variables within different contexts influence adolescent sexual behaviours such as condom use, multiple partners, or age of sexual debut (CDC, 1997). While there is a vast amount of research on individual

correlates in teen sexuality, there is a paucity of risky sexual intercourse research on Canadian youth, analyzing pertinent factors within multiple contexts.

A multi-contextual approach to studying adolescent sexual intercourse allows researchers to determine if various risk factors within different adolescent social contexts are associated with adolescent risky sexual intercourse and whether or not one context is more strongly associated. This type of analysis will aid practitioners and researchers alike in identifying sexual risk takers. Such identification provides the opportunity to target programs and policies towards youth at greatest risk for contracting sexually transmitted diseases and unplanned pregnancies. Further, as Furstenberg (2000) states, limitations in the adolescent development literature reveal,

> (r)esearchers have been much more attentive in looking at adolescence in single rather than multiple contexts. Most studies focus on the influence of families, or schools, or peers, or neighborhoods; only recently have investigators begun to examine multiple contexts in a single study. If we are to gain a more complete understanding of when, how, and why different contexts shape the trajectories of development, we cannot continue to study one context at a time. There is strong reason to believe that contexts operate in tandem even when their effects are relatively independent of one another (p.904).

In this research project, six risk factors, characterizing the three adolescent social contexts, are examined in relation to adolescent risky sexual intercourse. These risk factors are low parental monitoring and low parental support in the family context; high peer encouragement of risky behaviours and low peer support for no sex in the peer context and low school goals, and low GPA in the school context. By incorporating risk factors from multiple contexts, the researcher was able to explore the social ecology of adolescents engaged in risky sexual intercourse behaviours is explored.

Risky sexual intercourse behaviour is measured by three dependent variables: earlier age of first sexual intercourse, inconsistent condom use, and multiple partners. The benefit of defining risky sexual intercourse so specifically is that researchers have found that the most effective prevention programs focus on the reduction of specific sexual risk-taking behaviours (McKay, 2000).

RESEARCH OBJECTIVES

There are three research objectives within this project. These are:

Research Objective # 1	Are cumulative risk factors (low parental monitoring, low parental support, peer encouragement of risky behaviours, peer support for no sex, school goals, and school grades) associated with risky sexual intercourse?
Research Objective #2	Are any of the risk factors (low parental monitoring, low parental support, peer encouragement of risky behaviours, peer support for no sex, school goals, and school grades) that are part of the three social contexts (family, peers, and school) associated with risky sexual intercourse?
Research Objective #3	Are risk factors from one of these social contexts (family, peers, and school) more closely associated with risky adolescent sexual intercourse than others?

CHAPTER TWO:

LITERATURE REVIEW

In this chapter, research is reviewed that examines the relationships between the independent variables (parental support, parental monitoring, peer encouragement of risky behaviour, peer support for no sex, school goals and school GPA) with the dependent variables (condom use, earlier age of first sex, and number of sexual partners). Each subsection begins with a review of relevant research on adolescent behaviours in general and is followed by a review of studies on adolescent risky sexual intercourse. The literature review begins with a description of research on adolescent sexuality.

ADOLESCENT SEXUALITY

Adolescence marks a life stage wherein teens are faced with novel opportunities and experiences, identity development and formation. Sexual identity becomes prominent (Adams, 2000). Unless otherwise stated, the literature reviewed for this research project defines sexual activity as sexual intercourse and does not refer to other sexual experiences, such as oral sex or fondling.

Schnriner (1996), a Canadian researcher, found that 44% of grade 9 to 12 students are sexually active. The Youth Risk Behaviour Survey (YRBS) from 1990-1995 indicates that a high proportion of high school students in the United States do not practice contraception and continue to be at risk for unplanned pregnancies and sexually transmitted disease (Warren, Santelli, Everett, Kann, Collins, Cassell, Morris & Kolbe, 1998). However, the latest YRSB findings indicate that fewer high school students from

1991-1997 placed themselves at risk for HIV infection, other STD's and teen pregnancy, indicating a downward trend in risky adolescent sexual behaviour.

Teens are far more likely to engage in sex before finishing high school than they were a decade ago (Maticka-Tyndale, 1991; Laumann, Gagnon, Micheal & Micheals, 1994). As adolescents are becoming sexually active at younger ages than in past generations, the probability of multiple partnering has also increased (Duncan-Ricks, 1992; Laumann, et al., 1994).

As teens got older, there is an increased probability of sexual activity (Hoefferth, Kahn & Baldwin, 1987; Zelnik & Kantor, 1980; Adolescent Health Survey, 1993; Singh & Darroch, 1999). Many adolescents 15 years of age or younger have not had intercourse. According to the National Family Growth survey (1995), approximately 14% of 20-24 year olds report that they had intercourse before age 15 (Singh & Darroch, 1999).

The Canada Youth and Aids researchers (1988) reported that 40% of 16 year olds and 53% of 17-year-olds report sexual experience (King, Beazly, Warren, Hankins, Robertson, & Radford, 1988). There is a linear relationship between age and sexual experience whereby "(b)y age 18 about two-thirds of never-married young men have experienced sexual experience" (Hayes, 1987 as cited in Randal, 1992, p.74). Thus, age is a significant predictor of adolescent sexual activity (Hayes, 1987).

Adolescent sexual activity can have numerous life altering consequences. The increase in teen sexual intercourse has occurred concurrently with several increases in undesirable physiological outcomes. The number of unplanned pregnancies has life-long effects on unwed teen mothers and their offspring. Higher levels of poverty, lower levels

of education, as well poor physical and mental health are associated with unintended teen pregnancy. It is a social issue with far reaching consequences (Wellings & Mitchell, 1998; see reviews Coley & Chase- Landsdale, 1998; Jorgenson, 1993). Teen pregnancies account for approximately 25% of all accidental pregnancies annually since 78% of teen pregnancies are unplanned (Henshaw, 1998). Statistics Canada reports the teen pregnancy rate as the number of live births that occur per 1000 females per year. In 1996, the teen pregnancy rate was 22.1/1000 (Laboratory Center for Disease Control (LCDC), 1999).

The earlier an adolescent engages in sexual intercourse, the higher the probability of unplanned pregnancies. Wellings et al., (1998) state, "(t)hose who have sexual intercourse before the age of 16 are four times more likely to become parents before twenty than those who delay sexual activity" (p. 88). Further, when sexually active teenagers do not use any form of contraception, there is a 90% chance that they will become pregnant within one year (Harlap, Kostm & Forrest, 1991). Within two years after the birth of their first child, 25% of teen mothers will have their second child (Kalmuss, & Namerow 1994).

Summary

Adolescence is a time of experimentation coinciding with sexual identity development. The research indicates that there has been an increase in the number of teens that have had their first sexual intercourse experience before they complete high school. Also, though many teens are choosing to use condoms, they are not using them consistently. With these trends in mind, it is important to understand the contexts in which adolescent risky sexual intercourse occurs.

In the following sections the researcher examines studies on three adolescent social contexts: family, peers, and school. The subheadings identify research on the risk factors within each context associated with adolescent behaviours.

Family Context

Parenting Practices

The parent-child relationship has a clear impact on the psychological well being of youth (Shucksmith, Hendry & Glendinning, 1995). The bond between parent and child signifies the earliest and most enduring social relationship of the human life span (Basic Behavioural Science Task Force of the National Advisory Mental Health Council, 1996). The research domain on family dynamics, specifically focusing on the parent-child relationship, has developed into two main areas of study. These are parenting practices and parenting styles (Darling & Steinberg, 1993).

There is a significant theoretical distinction between parenting styles and parenting practices (Darling & Steinberg, 1993). While research into adolescent sexuality can encompass several parenting variables, this study looks only at two types of parenting practices. These are parental support and parental monitoring in relation to adolescent risky sexual intercourse. These two constructs are well founded in previous research (Barnes, Reifman, Farrell & Dintcheff, 2000; Metzler, Biglan, Avry & Fuzhong, 1998).

Parenting style is defined as, "(a) stable complex of attitudes and beliefs that form the context in which parenting behaviours occur" (Darling & Steinberg, 1993, p. 488). Baumrind's classic studies (1966, 1967 and 1968) describe a three style parenting typology. The researcher's authoritative, authoritarian, and passive parenting styles are

often referenced in the parenting literature. Macoby and Martin (1983) revised aspects of Baumrind's earlier typology with the addition of a fourth parenting style, namely neglectful parenting (Shucksmith, Hendry & Glendinning, 1995).

Parenting practices are defined as behaviours, not attitudes. Thus parenting practices "(a)re specific goal-directed behaviours through which parents perform their parental duties" (Darling & Steinberg, 1993, p. 488). There is potential for researchers to indicate a direct effect or immediate consequence based on the parenting practices. On the other hand, parenting styles are attitudes; hence, the impact is indirect. Parenting styles act as a moderator between parenting practices and adolescent behaviours (Darling & Steinberg, 1993). This distinction was noted as an important theoretical advance in the parental socialization research field (Brenner & Fox, 1999).

The focus of the present study is on adolescent risky sexual intercourse and examines the impact parenting practices have on adolescent sexual-risk taking, as well as the adolescent's social and psychological well-being. Parenting style is not taken into account.

Parental Monitoring and Adolescent Behaviours

The parenting literature uses several key constructs interchangeably, notably, parental monitoring and parental control attempts (Boyce, 1992). Previous research makes unique distinctions between the two terms (Barnes & Farrell, 1992). Thus, this literature review examines articles that analyze both parental control attempts and parental monitoring. Parental monitoring is the term used to describe both concepts.

Monitoring is a parenting practice associated with what other researchers define as parental control attempts. As cited in Barnes and Farrell (1992), Rollins and Thomas

(1979) define control attempts as, "(p)arental behaviours towards the child which are intended to direct the child's behaviour in a manner acceptable to the parents" (p. 764). Researchers have identified four control subscales: (a) coercive control, (b) inductive control (c) explicit parental rules for behaviour (d) parental monitoring (Barnes & Farrell, 1992). Each control subscale measures a different aspect of control. Coercive control measures the frequency with which either parent slaps or hits his/her child and the frequency of which either parent yells or screams at the adolescent after the teenager disobeys the parent. Inductive control refers to the extent that parents communicate with their teenager about what is right and wrong and what the consequences are for inappropriate behaviour. Parental rule making measures whether or not parents have set explicit rules for a series of 12 items, for example, family rules about dating. The last control subscale measures parental monitoring behaviours. Adolescents are also asked whether or not they tell their parents where they are after school. Adolescents are asked how often their parents really know where they are; in essence how honest are the teens about their whereabouts.

There is controversy as to whether or not control attempts are curvilinearly or linearly related to adolescent behaviours. As previously mentioned, Barnes and Farrell (1992) measured control attempts with four different subscales. They did not find evidence of a curvilinear relationship between any of the control variables and the four different outcome measures: alcohol consumption, illicit drug use, deviance, and school misconduct. Rather, a negative linear relationship was reported. As parental monitoring increased, the adolescent's problem behaviours decreased.

In order to address the controversial findings in previous empirical research on control attempts, Barnes and Farrell (1992) analyzed the four components of control separately. Of the four concepts, parental monitoring was the best predictor of problem behaviours. A high level of parental monitoring was associated with the lowest levels of drinking, illicit drug use, deviance, and school misconduct.

Furthermore, high monitoring has been associated with lower levels of aggression, delinquency and antisocial behaviour (Loeber & Stouthamer-Louber, 1986; Patterson , Reid and Dishion, 1992). Parental monitoring and supervision of children's behaviour is strongly predictive of conduct disorders in a sample of clinic referred adolescents (Frick, Christian & Wootton, 1999). Low levels of parental monitoring behaviours are also associated with poor adjustment in young adolescent boys (Capaldi & Peterson, 1991).

A longitudinal study, investigating the effects of parenting on the development of adolescent alcohol problems, ascertains that parental monitoring is an important factor in the prevention of alcohol misuse. The authors found that monitoring predicted adolescents' initial drinking levels as well as their rates of increased drinking behaviours (Barnes, Reifman, Farrell & Dintcheff, 2000). Molina, Chassin and Curran (1994) revealed that a lack of parental monitoring activities is closely related to adolescent substance abuse. Chilcoat and Anthony (1996) conducted a different longitudinal study, with annual interviews over a four-year span. Researchers found that parental monitoring remains a formidable protective factor against adolescent substance abuse. Further positive benefits of effective monitoring includes enhanced psychosocial adjustment (Baumrind, 1991).

Summary

According to the reviewed parental behavioural control research, parental monitoring is the best predictor of adolescent behaviours. Thus, the only control attempts that were integrated in the present study are parental monitoring behaviours. Such behaviours encompass parents' knowledge of their teen's whereabouts. The next body of literature reviewed examines the specific relationship between adolescent sexual activity and parental monitoring.

Parental Monitoring and Adolescent Sexual Activity

There is a paucity of literature, as well as inconsistent findings, when monitoring and teen sexuality is linked (Boyce, 1999; Miller & Moore, 1990; Miller, Olson & Wallace, 1986). The research reviewed is inconclusive about any relationship between parental monitoring and adolescent sexual experience. Some researchers have found no relationship between parental monitoring and adolescent sexual activity (Casper, 1990; Miller & Moore 1990; Moore, Peterson & Furstenberg, 1986; Newcomer, Udry, 1984). Others have found evidence of a significant relationship. Adolescent sexual experience, chance of early dating and teen pregnancy rates have been associated with parental monitoring, wherein a lack of parental control resulted in increased sexual activity (Barnes & Farrell, 1992; Hogan & Kitawaga, 1985; Newcomer & Udry, 1987). Furthermore, parental monitoring or supervision of adolescent social activities has results in a consistent relationship with delayed sexual initiation or decreased sexual activity and fewer sexual partners (Capaldi, Crosby & Stoolmiller, 1996; Danziger, 1995; Ku, Sonenstein, & Pleck, 1993; Metzler, Noell, Biglan, Avry & Smolkowski, 1994; Romer, Black, Ricardo, Feigelman & Kalijee, 1994; Small & Luster, 1994).

With regards to sexual risk taking, parents who closely monitored their sexually active adolescent sons and daughters had children who were more likely to minimize their sexual risks when compared to their peers who were monitored less (Luster & Small, 1994; Rodgers, 1999;Small & Luster, 1994). Miller and Forehand (1999) indicate that increases in maternal monitoring are consistently related to fewer sexual partners and less frequent adolescent sexual intercourse.

However, as mentioned previously, monitoring does not always consistently indicate reduced adolescent sexual activity. Rather, the degree of parental monitoring has important implications and may shed light as to what role parental monitoring plays in the reduction of risky teen sexual intercourse.

Some researchers report a curvilinear relationship between parental monitoring/control attempts and adolescent sexual activity. Too many rules and too little supervision are related to a greater likelihood of adolescent sexual experience (Miller et al., 1986). Overcontrolling behaviours or overmonitoring may instill feelings of resentment or rebellion in adolescents, promoting their engagement in sexual activity (Fisher, 1986). Moderation in this parenting practice appears to be more effective than excessive control or lack of parental monitoring.

At the program and policy level, parental intervention programs that focus on increasing parental skills such as monitoring behaviours, have increased efficiency of health promoting strategies for youth in high risk settings. Children who report high levels of parental monitoring are less likely to report initiating sex in preadolescence (age 10 or younger). Instead, they are likely to report lower rates of sexual initiation as they age (Romer, Stanton & Galbraith, 2000).

As children get older, parents' level of supervision and monitoring decrease (Bulcroft, Carmody & Bulcroft, 1996; Frick, Christian & Wooton, 1999; Paikoff & Brooks-Gunn, 1991). Parenting approaches need to be age appropriate, with a stronger emphasis on parental controlling behaviours in early adolescence, aged 13-14, with less control evident in middle adolescence, 15-16 years of age (Shucksmith, Henry & Glendinning, 1995). However, "(t)eaching parents about the importance of parental monitoring and how they can monitor without being intrusive is one way to ensure low-risk sexual behaviour among sexually active teens" (Rodgers, 1999, p. 7).

Summary

Some researchers have noted a significant relationship between parental monitoring and teen sexual experience. Continued investigation in the parent-child relationship connecting adolescent sexuality with parental monitoring is warranted due to inconsistent findings. Recent researchers suggest promise in the development of parental skill training as a means to reduce adolescent sexual risk taking. Since monitoring is a skill that can be taught to parents, there is a need for research to determine its role with risky adolescent behaviour. Furthermore, parental monitoring is age-related since researchers indicate this parenting practice decreases as the adolescent ages. Understanding the impact of monitoring at different grade levels may provide further insight.

Parental Support and Adolescent Behaviours

The second parenting practice reviewed is parental support. This concept has also been used interchangeably with other terms such as parental warmth (Peterson & Leigh, 1990). Parental support is used to refer to both support and warmth.

There are two significant reasons why parental support was chosen for further investigation in the current study. First, the parental socialization literature emphasizes the need to understand the role that parental support has on adolescent behaviours (Barnes & Farrell, 1992; Barber & Rollins, 1990). Secondly, there is evidence of potential interactions between the two parenting constructs, support and monitoring. It was recommended that research examining both parenting constructs within one study be conducted (Barnes et al., 2000; Barnes & Farrell, 1992).

As cited in Barnes and Farrell (1992), Rollins and Thomas (1979) define the parental support construct as, "(p)arental behaviours towards the child such as praising, encouraging, and giving physical affection" (p.764). Parental warmth is defined as the, "(p)arent's acceptance of the child as an individual of worth and reflects the parent's willingness to invest time and energy in the child" (Shaffer, 1965 as cited in Scott & Johnson, 1993, p.56).

The absence of maternal warmth or acceptance has been associated with general problem behaviours among adolescents (Fauber, Forehand, Thomas & Wierson, 1990). Specifically, parental support has been found to be a significant predictor of adolescent problem behaviours such as drinking, illicit drug use, deviance, and school misconduct (Barnes & Farrell, 1992). Barnes and Farrell (1992) report negative linear relationships between all four stated outcome variables and parental support.

Lack of parental support acts as a risk factor for adolescent problem behaviours while its presence acts as a protective factor against adolescent substance abuse (Wills & Clearly, 1996; Barnes, Farrell & Cairns, 1986). Parental support subsequently promotes

positive adolescent adjustment (Faber et al., 1990) and global well-being (Demo & Acock, 1996)

Summary

There is empirical evidence to suggest that parental support impacts a variety of adolescent behaviours. Parental support may promote the health and well-being of adolescents by encouraging positive life choices and discouraging engagement in various risk behaviours. Lack of parental support may also increase the likelihood that adolescents will engage in problem behaviours. For the purposes of the present investigation, emphasis is on the hypothesized impact that lack of praise and encouragement has on adolescent risky sexual intercourse.

Parental Support and Adolescent Sexual Activity

Several researchers have reported the crucial role that parental support plays in the sexual risk-taking behaviours of adolescents. Most of the research associating parental support with adolescent sexual intercourse behaviours is based on a comparison of adolescents that are sexually active versus non-sexually active teens.

Investigators have indicated that a strong supportive mother-daughter relationship increases the likelihood of delayed sexual intercourse and decreases the chance of multiple teen pregnancies (Fox, 1980; Fox & Inanzu, 1980; Gispert, Brinich, Wheeler, & Krieger, 1984). Furthermore, adolescent males who report high levels of emotional support from their parents have significantly lower rates of first sex than those reporting low levels of support (Upchurch, Aneshensel, Sucoff & Levy-Storms, 1999).

Feldman and Brown (1993) have assessed childhood influences on adolescent sexual activity. This research reveals that certain child rearing techniques, such as

supportive parental relationships with sixth grade boys, predict adolescent sexuality four years later. The family environments of these children predicted with more than 70% success who would be nonvirgins and who would remain virgins four years later.

Researchers who have examined the connection between supportive versus nonsupportive parenting for both genders purport similar findings. Adolescent sexual risk takers (those with multiple partners and who report inconsistent contraceptive use) are more likely to perceive their parents as nonsupportive (Luster & Small, 1994, Small & Luster, 1994). Supportive parental child rearing is associated with increased contraceptive use, and decreased adolescent sexual activity (DHSS, 2000; Scott & Johnson, 1993).

Summary

Parental support is a significant parenting practice that influences adolescent sexual intercourse behaviours. Lack of support acts as a risk factor in the engagement of specific sexual risk behaviours, such as multiple partners, or lack of contraceptive use.

This project is unique because it examines sexual intercourse behaviours with a group of adolescents experienced in sexual intercourse. There is no comparison group with non-sexually active teens. This allows the researcher to examine risky and safe sexual intercourse behaviours within the same group and determine if low parental support acts as a risk factor increasing the likelihood of risky sexual behaviours.

Literature on Parental Support and Parental Monitoring

Evidence presented in this literature review demonstrates there is a relationship between parenting practices and adolescent behaviours. While the investigation of both

parental support and parental monitoring within one study has been suggested by previous researchers (Barnes & Farrell, 1992),

> (f)ew if any studies that have examined the relation between parental behavioural control and adolescent sexual behaviour have considered the moderating effect of the closeness of the parent-child relationship. Adolescents with a close relationship characterized by support, warmth, trust and respect may be more likely than their peers with distant parental relationships to internalize their parents' concerns and control efforts (Hirschi, 1969 as cited in Rodgers, 1999).

Research that has examined both parenting practices within the same study indicates that

> (p)arental monitoring can be a protective process, independent of parental support. It is possible that parental monitoring (e.g., knowing where and with whom your teen is and what he or she is doing) conveys to teens that parents care and are concerned. Sexually active teens that are closely monitored may reciprocate perceived caring and concern by behaving in ways that will minimize their sexual risk and their parents' worries about their behaviour (Rodgers, 1999, p. 5).

An investigation distinguishing between sexually active adolescents who are at risk for pregnancy and for STDs and sexually active teens who are at lower risk for these outcomes reveals both high risk males and females were less closely monitored and perceived less parental support (Luster & Small, 1994). This research indicates lack of parental support and monitoring are risk factors for adolescent risky sexual behaviours.

However, Inanzu and Fox (1980) found that when both mother's socioemotional support and monitoring behaviours were considered, the strongest predictor of sexual experience was the daughter's perceived supportive relationship with her mother. Parental monitoring was considered a direct form of sexual socialization, whereas an open and supportive mother-daughter relationship was regarded as an indirect form of sexual

socialization. Findings indicated that indirect means such as a supportive relationship had a greater impact on adolescent sexual experience. Maternal monitoring on the other hand was not predictive of adolescent sexual experience (Inanzu & Fox, 1980).

Summary

Inconsistent findings warrant the future study of both parental support and monitoring within one research design. This research project will add to the parenting literature as to which practices influence risky sexual intercourse behaviours. Whether both parenting practices in tandem have the most influence is also examined.

Multivariate, process-oriented parenting research provides a unique opportunity to predict the influence and impact that family environment has on adolescent sexual activity (Cooper, Grotevant & Condon, 1983; Feldman & Brown, 1993). The research design of this project not only allows for the examination of interaction between two family factors, parental support and parental monitoring, but also the analysis of significant factors within the peer and school setting. This helps determine the relative importance of the family context when other contextual factors are taken into account. The following section examines research relating to the peer context.

PEER CONTEXT

As previously discussed, the parent-child bond remains an influential factor in research about adolescent sexuality. However, during adolescence, issues concerning peer conformity come to the forefront as well. This results from increased time spent among peers as time spent with family members or other adults decreases (Christopher &

Roosa, 1991). Typically, high school students spend twice as much time each week with peers as with parents or other adults, even discounting time in class (Brown, 1990).

The structure and function of the educational system aids the transformation and importance of peer groups during adolescence. First, there is an increase in time spent solely with peers. Second, adult supervision decreases allowing peer groups to function independently. Third, adolescence marks a period whereby more time is spent with opposite sex friends (Lawrence, 1991). Overall, peers become increasingly more influential with age (Treboux & Busch-Rossagel, 1990). So much so that, "(p)eer affiliation remains an important agent during the period of socialization even after the effects of parenting have been taken into account " (Barnes & Farrell, 1992, p. 773).

Still, peers are not the only influential socializing agent. The significance of both parents and peers rests in the fact that adolescence is considered a time of transition where one is moving from childhood towards the realm of adulthood. With this transition comes a change in role models and social contacts (Moore & Rosenthal, 1993). This does not indicate peers replace parents as significant role models, nor does it mean the opposite. In fact, a Canadian survey on Alberta youth showed that adolescents consider both family members and peers as vital role models impacting life choices (Alberta Health & Wellness, 1999).

In terms of adolescent problem behaviours, the influential role of both parents and peers presents an interesting dilemma as to which socialization agent is predominant. While researchers have not been able to consistently determine the primary agent (Furstenberg, 2000) it is understood, that both peers and parents have significant influences over life choices (Avry, Duncan, Duncan & Hops, 1999; Barnes et al., 2000;

Demo & Acock, 1996; Jaccard & Dittus, 1996; Miller et al., 1999; Patterson 1982, 1986; Small & Luster, 1994; Whitaker & Miller, 2000).

There are several studies investigating the importance of either the familial environment or the peer group context (Harris, 1995). However, there are a limited number of studies that examines the concurrent effects of parent and peer influence (Whitaker et al., 2000; Christopher & Roosa, 1991; Feldman, Brown, 1993; Holtzman & Rubinson, 1995; Romer et al., 1994; Scott & Johnson, 1993).

Researchers who have examined the interactive effects of both key agents in adolescent socialization report that peers and parents are strong proximal predictors of adolescent problem behaviours (Avry et al., 1999). Other studies indicate that when the interactive effects of both parents and peers are taken into account, peer influence has more predictive ability with adolescent sexuality (Scott & Johnson, 1993). Even still, "(i)t seems that in areas related to the immediate life and environment such as alcohol and drug taking, peers are more influential. However, in issues related to basic values such as educational aspirations, parents are more influential" (Swadi, 1999, p. 217).

The family context, specifically focusing on two parenting practices (monitoring and support), was discussed previously. The next section is based on the peer context. The terms peer affiliation, peer orientation, and peer conformity all reflect peer group norms and is used interchangeably throughout this review.

Within the following section articles dealing with peer group norms and adolescent behaviours are reviewed. Research on the relationship between peer affiliation and adolescent sexuality is discussed next. Once the pertinent trends are revealed in the adolescent sexuality and peer affiliation research, a critique of investigations that

examine the interaction between peer group norms and parenting practices (support and monitoring) follows.

Peer Group Norms and Adolescent Behaviours

Problem behaviours and deviance are concepts used interchangeably throughout the adolescent outcome literature and may refer to different activities and behaviours. Jessor and Jessor (1977) have defined deviance as a "(b)ehavior that is socially undesirable by the norms of conventional society and the institutions of adult authority" (p. 33).

A longitudinal study assessing whether the development of problem behaviours in children transcends into adolescence, indicates that associations with deviant peers is a strong proximal predictor of the engagement in general problem behaviours (Avry, Duncan, Duncan & Hyman, 1999). Examples of problem behaviours include antisocial acts, high risk sexual behaviour, academic failure, and substance use.

During the 1990s, Canadian adolescent non-medical drug use escalated (Adlaf, Paglia, Ivis & Ialomiteanu, 2000). Swadi (1999) points out "(p)eer drug use has universally been identified as the single factor most likely to predict current drug use" (p. 213). Other researchers subsequently consider the widespread increase in adolescent drug use as an 'epidemic' facilitated by peer groups who themselves are users (Rowe & Rodgers, 1991). In support of these findings researchers state that 24% of adolescent drug users report that their best friends take drugs whereas only 3% of non-drug users report the same (Swadi, 1989, as cited in Swadi, 1999). Hence, peer related variables seem to be powerful predictors of drug use (Dewitt and Silverman, 1995; Dileman, Butchart, Campanelli, & Caspar, 1989; Duncan, Duncan and Hyman 1994).

A notable relationship exists between the use of illicit substances and risky sexual behaviours (McEwan et al., 1992). High school students who report the use of drugs and alcohol are more likely to be at risk of contracting STDs. The combination of drugs and alcohol with sexual activity often increases the chance of risky adolescent sexual intercourse (Alan Guttmacher Institute, 1999).

If adolescents are using drugs or smoking cigarettes there is a high probability that their friends are engaging in similar peer group activities (Mosbach & Leventhal, 1988; Oetting & Beuavais, 1986). Further links have been found among adolescent involvement with antisocial peers and substance use (Dishion, Reid & Patterson, 1988) and delinquency (Patterson & Dishion, 1985).

The association between peer group similarities and risk-taking behaviours remains influential even among pregnant adolescents. Investigators have found that substance-misusing expectant teens were also more likely to have substance-misusing peers (Kokotailo et al., 1992).

There are several limitations in the research on peer group norms. Foremost, most are correlational, and cannot predict the direction of the relationships found. It is unclear whether or not, "(f)riends directly influence behaviours or whether a selective process operates where friendship choices are made on the basis of perceived similarities" (Whitaker, Yoder, Hoyt & Conger, 1999, p.3).

Summary

There is a strong empirical base associating adolescent problem behaviours with peer group norms. A variety of adolescent substance use and antisocial acts have all been connected to peer group influences. However, as previously mentioned, there is a lack of

longitudinal research that can determine the exact nature of the relationship between peer norms and adolescent behaviours.

Peer Group Norms and Adolescent Sexual Activity

When determining how peer groups influence sexual behaviours, it is important to note the distinction between perceived peer behaviours and reported behaviours. Often objective reports of peer sexual behaviours are not measured (Cvetkovich & Grote, 1980). When they are measured, researchers have found that perceptions of peer behaviours are not always consistent with actual behaviours. But the adolescents' perceptions of their peers' sexual experience or attitudes are equally if not more predictive of their own sexual attitudes and behaviours. Studies have indicated that perceptions of peers' sexual attitudes and behaviours predict sexual risk behaviour among the adolescent population (Cvetkovich & Grote, 1980; Mays & Cochran, 1989; Romer, Black, Ricardo, Feigelman, Kalijee, Galbraith, Nesbit, Hornik, & Stanton, 1994). Indeed, friends who perceive their peers to be sexually active are likely to engage in sexual intercourse themselves (Gibson & Kempf, 1990; Millstein & Mosckicki, 1995; Shah & Zelnick, 1981; Whitaker, et al., 1999).

Recently, researchers have undertaken the task of expanding the focus in adolescent sexuality from a dichotomous viewpoint where adolescents are either virgins or nonvirgins, to a broader perspective. Miller (1997) differentiated adolescents based on their sexual experience or lack thereof, into five typologies. Whitaker et al., (2000) adapted this typology to a combined group of four classifications. The four groups are categorized as delayers, anticipators, singles, and multiples. The investigator found that 84% of adolescents who were classified as multiples (adolescents who have had sex more

than once and with several partners) also interacted with peers who were multiples. In contrast, 34% of delayers (individuals who had not had sex and do not anticipate doing so in the near future) had friends who they perceived to similarly be considered delayers (Whitaker, et al., 2000). In this sample, similar sexual behaviour among peers was found.

Contraceptive use is another variable related to peer conformity. Consistent condom use is related to peer group norms that support contraceptive use (DiClemente, 1991; Fisher, Misovich & Fisher, 1992). Hence, what adolescents consider normative peer group behaviours influences their performance of risky versus safe sex activities (Brooks-Gunn & Furstenberg, 1989; Petosa & Wessinger, 1990).

Another perspective concerns the relationship between peer pressure and the occurrence of unwanted sexual intercourse. "There is a growing body of evidence indicating that by later adolescence, a significant percentage of female youth have experienced some form of unwanted sexual activity in their relationships with peers" (Bird, Stith & Scglasale, 1991; Christopher, 1988; Mynat & Allegeier, 1990, as cited in Small et al. 1993, p. 941). According to the NHSLS (1992) peer pressure was cited by women as the main reason for unwanted voluntary first intercourse (Laumann, 1996). The survey distinguishs between forced intercourse and unwanted intercourse along a spectrum where forced intercourse represents the most extreme category. Even though these women did not report they were raped, they stated they felt pressured to engage in sexual intercourse, reporting their first sexual experience as unwanted though technically voluntary.

It was also found that adolescent girls who scored high in peer conformity were more vulnerable to unwanted intercourse initiated by their male peers (Small & Kerns,

1993). This finding is important considering,"(u)nwanted sexual activity is a significant problem among females during early and middle adolescence...overall, nearly 1 in 5 female adolescents reported some type of unwanted touch to forced intercourse" (Small & Kerns, 1993, p. 948).

Other investigations that have sought to determine the influence of peer pressure on adolescent sexuality found inconclusive results (Duncan-Ricks, 1992). Duncan-Ricks' (1992) investigation shows the influence of peer conformity on unwanted sexual intercourse is dependent on the adolescents' interpretation of the situation. The researcher found that when teens described intercourse as unplanned there is a correlation between sexual experience and peer pressure. However, when intercourse is planned, adolescents do not believe that peer pressure influences their behaviour (Duncan-Ricks, 1992).

Age is another influential variable in determining the relationship between peer conformity and adolescent sexual behaviour. Research had found that younger teens react more strongly based on their perceptions of their friends' attitudes and behaviour regarding premarital sexuality (Gibson & Kempf, 1990). Gibson and Kempf (1990) highlight the powerful role social pressure plays in adolescent sexual experiences of 12 to 15 year olds. The researchers indicate that personal attitudes about premarital sex are more influential than peer attitudes or behaviours for the older adolescents aged 16 through 18 years of age.

There are several limitations in the peer conformity literature. Correlational and cross-sectional research dominates the peer conformity research. Therefore, caution is recommended when interpreting the causal direction of peer orientation and adolescent sexual behaviour. Secondly, the vast majority of adolescent research on peer influence

focuses on the negative impact of peer group norms. Investigations that examine the impact of positive peer influence have been minimal (Whitaker et al., 1999). Thirdly, investigations that rely solely on self reports from one individual undermine the ability to determine if peers are indeed the primary socializing agent influencing adolescent sexual activity (Christopher & Roosa, 1991). Researchers who have measured objective reports of peers' sexual experience by utilizing data obtained from peers themselves have verified a positive relationship between peers' sexual behaviour and adolescent respondents' sexual behaviour (Billy & Udry, 1985; Billy, Rodgers & Udry, 1984).

As well,

> (a)s children approach and enter adolescence, they tend to spend more time with peers and less with parents. Given this normative shift in interpersonal relationships, peer group influences on sexual behaviours should increase relative to parental influence....unfortunately, research on adolescent sexual decision making has not adequately addressed this issue (Christopher & Roosa, 1991, p. 115).

Future research that examines both peer and family influence together can contribute greater insight as to which is the dominant influence for adolescent sexual decision making (Christopher & Roosa, 1991).

Summary

Peer groups play an influential role in adolescent sexuality. Peer affiliation impacts both adolescent sexual behaviours and attitudes. The choice to have sex has a profound impact on teenage lives, whereby the chance of pregnancy and acquiring a sexually transmitted disease is significant.

One of the strengths of the current investigation is the inclusive definition of risky sexual intercourse (age of first sex, number of partners, and condom use). This study examines whether peer group norms are influential with different sexual intercourse

behaviours. Understanding the peer role across a broad definition of risky sexual intercourse behaviours will enable researchers at the program and policy level to effectively target risky sexually active adolescents and help explain why some sexually active adolescents choose safe sex practices.

Literature on Peer Group Norms and Parenting Practices (Monitoring and Support)

The body of literature that examines the interactive effects between parenting practices and peer group influences is sparse. Researchers have indicated that when peer orientation is valued more strongly than parental values, peers are placed at an increased risk of engaging in high-risk behaviours, specifically alcohol abuse and illicit drug use (Barnes, Farrel & Windle, 1987). Teens with unsupportive parents are more likely to be peer orientated, with a greater likelihood of peer influence (Kandel & Andrews, 1987; Steinberg, 1987; Steinberg & Silverberg, 1986).

Both parental support and monitoring are significant predictors of specific adolescent behaviours, namely adolescent drinking and deviance. After taking these variables into account, peer influence is found to be a significant predictor of adolescent problem behaviours as well (Barnes & Farrell, 1992). Barnes and Farrell (1992) define deviance to include both minor disruptive acts such as arguing with parents to more serious behaviours including use of illicit drugs and sexual intercourse (Barnes & Farrell, 1992). Furthermore, Barnes and Farrell (1992) noted an interaction effect was noted between high peer orientation and low parental monitoring in the prediction of deviant behaviours engaged by boys. In contrast, low mother support had an added predictive effect on deviant acts performed by girls (Barnes & Farrell, 1992).

Researchers who have analyzed the impact that peers and parents have on adolescent sexuality have found that peer influence is more strongly associated with the prediction of adolescent sexual behaviours (Scott & Johnson, 1993; Shah, et al., 1981). Investigators who differentiate the relationship between peer-oriented and parent-oriented adolescents indicate that peer-oriented adolescents are more likely to engage in sexual behaviour (Owuamanam, 1983).

Researchers doing a longitudinal study investigating the relationship between peer influence and parental monitoring on adolescent substance abuse indicate that monitoring deters substance abuse and encourages adolescents who are heavily involved in substance use to lessen their involvement (Steinberg & Fletcher, 1994). However, as to the interaction between peer influence and parental monitoring, an indirect relationship was found whereby

> (p)oorly monitored youngsters are more likely to start using drugs, and once drug use is initiated, are more likely to associate with and be influenced by drug-using peers. In essence, a lack of parental monitoring may set the process of drug use in motion, but contact with drug-using peers may exacerbate the pattern (Steinberg & Fletcher, 1994, p. 9).

This indirect relationship has frequently been cited by Patterson and colleagues (Patterson, 1982; 1986; Patterson & Dishion, 1985). These researchers propose a strong theoretical linkage between familial factors and peer factors where "irritable, coercive parenting styles, characterized by explosiveness, inconsistent monitoring and supervision, and little time spent between parents and child, socialize similar interactional patterns in children. These patterns are rejected by more socially skilled peers, resulting in a drifting toward deviant peer associations" (Patterson et al., 1994, p. 407).

Ary et al. (1999) examine the influence of parents and peers with an adolescent sample. Their findings support Patterson and colleagues' (1986; 1989; 1992) developmental model of antisocial behaviour, emphasizing the importance and the effects of the family environment interacting with the peer group context. Different researchers have corroborated this finding suggesting that "(t)he results also indicate that, despite evidence of increasing peer influence among adolescents (Collins, 1990; Montemayor, 1982), parental influence can continue to be a moderating or augmenting source of influence throughout adolescence" (Brook, Whiteman, Gordon, and Brook, 1985; Krosnick and Judd, 1982 as cited in Ary et al., 1999, p. 226).

Summary

A handful of researchers have investigated the relationship between various problem behaviours and the interactive influence of both parents and peers. However, there are few researchers who have investigated the interactive effects of parenting and peer risk factors on risky adolescent sexual intercourse (Ary et al.,1999; Day 1992; Owuamanam, 1983; Udry & Billy, 1987). Specifically, a handful of researchers have taken a risk factor perspective in an effort to understand the multiple influential factors of engaging in risky adolescent sexual behaviours (Luster & Small, 1994; Perkins, Luster & Small, 1998; Small & Luster, 1994; Smith, 1997). In addition, almost all these investigations were based on American samples. The purpose of the present study is to contribute to the realm of research that examines risky adolescent sexual intercourse utilizing Canadian data.

The last contextual variable examined in this literature review is the adolescents' school environment. Within the next section, research on the relationship between academic performance, academic aspirations and adolescent sexuality is reviewed.

School Context

Literature on Academic Aspirations and Academic Performance

Adolescents are faced with difficult school transitions from elementary to junior high, and from junior high to senior high school. Academic performance and health behaviours can be strongly affected by this change in school context (Petersen, Compas, Brooks-Gunn, Stemmler, Ey and Grant, 1993).

Unfortunately, there has been little research on the school context, and how teenage sexual intercourse relates to school factors (Franzese, 1999). Considering, "(t)he main threats to adolescents' health are the risk behaviours they choose. How their social context shapes their behaviours is poorly understood" (Resnick, Bearman, Blum, Bauman, Jones, Tabor, Beuhringer, Udry, 1997). There is a strong need to conduct such research in order to further understand adolescent risk activities.

The significance of the school context in relation to both the family and peer social settings was found by Huebner and McCullough (2000) through an investigation of the correlates of school satisfaction. The researchers state that in order to understand the impact that school-related variables had on social and emotional well-being, it is important to understand the student on many levels wherein family life and peer relations are important factors. "Such comprehensive 'developmental histories' require educators

to adopt an ecological systems orientation, in contrast to orientations that emphasize the individual in her or his immediate environmental context" (Huebner et al., 2000, p.335).

There are three principal reasons why examination of the school context is beneficial. First, schools are considered important socialization agents. Second, the large amount of time adolescents spend within this social environment, whereby:"(s)chool is an important arena in the life of adolescents as one quarter of their time is spent in this environment..." (Adolescent Health Survey, 1993). Third, it is through the school system that the greatest number of young people can be reached for prevention and or intervention activities (Steinberg, 1999).

Schools not only provide maximum access to adolescents, it was also within this context that many adolescent prevention and intervention efforts are conducted (Hops, Davis & Lewin, 1999). If school factors such as grades or school aspirations are associated with adolescent risky sexual intercourse, then it is in the best interests of school psychologists and health professionals to incorporate such findings within their programs. There is a compulsion to use the school system both as a means to access and implement relevant information. "As we move into the twenty-first century, schools undoubtedly will continue to play a central role in the development and implementation of a wide range of social policies concerning young people" (Steinberg, 1999, p. 184).

The present study examines two specific school factors. These are school aspirations and academic performance. School aspirations refers to the adolescents' future educational goals. For instance, whether they plan to further their education with the choice of postsecondary education, graduate with a high school diploma without continued academic endeavors, or if they choose to drop out of high school. There are

several interchangeable terms in the school context for this same concept. Academic aspirations are also referred to as educational plans (McCauley-Ohannessian & Crockett, 1993) and educational expectations (Mounts, 2001).

The second school contextual variable used in the current study is academic performance. This term refers to adolescents grade point average (GPA; (Demo & Acock, 1996). Investigators either use percentages, where below 50% indicates failure, or the letter system is applied. For example, A indicates high percent and D would indicate low percent. Researchers have also utilized the term academic achievement (Dornbusch, Ritter, Leiderman, Roberts & Fraleigh, 1987) to refer to the same concept. The present researcher uses academic performance interchangeably with school grades or GPA and academic aspirations interchangeably with school goals.

While there is basis for the argument that school goals and GPA are influenced by individual characteristics, the school environment also plays a prominent role. Moreover, "(d)escriptive studies have shown specific mechanisms to be associated consistently with schools that are effective in producing better academic outcomes for students than would be expected from students' background characteristics" (Hawkins, 1999, p.281). High school expectations and an academic emphasis are two of the characteristics that define effective schools (Mortimore, 1995 as cited in Hawkins, 1999). Placing academic aspirations and academic performance within the school context highlights the premise that the school environment is an important socialization agent for adolescent health. The inclusion of GPA and school goals as school factors opens the door for future research to include other school factors in the study of adolescent risky sexual intercourse.

Some researchers have considered academic performance and academic aspirations as individual factors and not as school factors (Moore, Manlove & Glei, 1998). Other researchers have defined academic performance and academic aspirations as education-related and categorized the factors within the school context (Hawkins, 1999).

Literature on School Factors and Adolescent Behaviours

Poor academic performance is associated with depressed mood and antisocial behaviours. Higher grades are associated with lower adolescent antisocial and delinquent behaviours, such as running away from home or purposely destroying or damaging property (Barber & Olsen, 1997).

Furthermore, a strong sense of school connectedness, defined as a feeling of closeness to school staff and the school environment, is related to a decrease in adolescent health risk behaviours. Low academic performance is affiliated with low school connectedness (Bonny et al., 1999; Resnick et al., 1997). Future educational plans are also significantly associated with a decreased likelihood that these adolescents will engage in health risk behaviours such as alcohol and other drug use (Schnirer, 1996).

The significant influence of schools on adolescent health behaviours is noted across cultures. For example, the association between adolescent smoking and drinking behaviours with poor academic performance and low school connectedness has been demonstrated in several cross-cultural studies (Chassin et al., 1986; Clayton, 1991; Dinges & Oetting, 1993; King, Wold, Tudor-Smith & Harel, 1996; Krohn et al., 1986; McDonald & Towberman, 1993; Nutbeam et al., 1993; Thorlindsson & Vihjalmsson, 1991).

When comparing students who perform above average academically versus those who score below average, a number of factors have been found to be negatively associated with school performance. For instance, students reporting academic grades below average are more likely to have consumed alcohol in the past month, tried drugs, considered suicide, are more apt to have been physically and sexually abused and also report higher levels of emotional distress and smoking behaviour (Adolescent Health Survey, 1993). When grade 9 students excel academically, the chance of frequent drug use decreases (Hawkins, Catalano & Miller, 1992).

Based on a longitudinal study, Mounts (2001) indicates that perceptions of parental monitoring are related to both academic achievement and academic aspirations. When parental monitoring is perceived to be high, adolescents report higher grade point averages (GPA). Concurrently, highly monitored adolescents also associate with peers with higher GPAs and higher educational plans (Mounts, 2001). Thus, adolescents who are high academic achievers are more likely to associate with similar academic achieving and aspiring peers. These adolescents report a strong social network of like-minded friends. The presence of this social network proves essential to the academic achievement of these peers (Hebert, 1999). Mounts and Steinberg (1995) also found a significant direct effect between peer academic achievement and adolescent GPA over a one-year period.

Literature on School Factors and Adolescent Sexual Activity

Not only are specific school variables associated with general adolescent behaviours, there is also a strong association between the two school factors and adolescent risky sexual intercourse. Data from students in Grades 9-12 reveale a

significant relationship between high academic achievement and adolescent sexual activity, where 81% of the honor students (over 80% GPA) were not sexually active. On the other hand, sexually active adolescents were more likely to have lower cumulative grade point averages (Schnirer, 1996).

Gender differences were noted with regards to adolescent sexual activity and the impact of academic achievement. A longitudinal study investigating the effects of sexual activity on adolescent social and psychological development suggests a negative relationship between academic grades and adolescent sexual activity for teenage boys (Billy et al., 1988). One author states that early sexual debut for teenage boys reveales a moderate negative impact on a boys scholastic achievement. However, the same is not indicated for girls. There is no meaningful relationship between early adolescent female sexual engagement and academic performance (Franzese, 1999).

Academic aspiration is the second school factor relating to adolescent sexual intercourse. A significant percent of junior and senior high students (78%) reporting high academic aspirations are not sexually active (Schnirer, 1996). Whereas, sexually active adolescents are more likely to be poor academic achievers with low educational aspirations (Hoefferth & Hayes, 1987).

Other researchers have indicated that,

> (e)arly sexual experience and educational attainment each have an independent effect on teenage pregnancy, and so combine to increase the risk. Those for whom educational prospects are poor are more likely to become sexually active,[and] more likely to conceive if they are sexually active...(Wellings, Field, Johnson, & Wadsworth, 1996, p.91).

Based on longitudinal studies, there is evidence of a negative relationship between early sexual activity and future educational goals for adolescent females (Alwin, 1986;

Billy, Landsdale, Grady & Zimmerle, 1988). High academic performance and aspirations seems to lower the frequency of sexual activity for girls (McCauley-Ohannessian & Crockett, 1993). These findings support adolescent pregnancy prevention programs that strengthen girls' academic achievement and future aspirations (Hayes, 1987). Especially since lower grades and school goals are associated with irregular contraceptive use (Chilman, 1986; Morrison, 1985).

Notably, researchers report that "(a)s the teenager's interest and commitment to educational pursuits increased, the likelihood of participation in premarital, teenage sex deceased" (Miller & Sneesby 1988 as cited in Fehlauer, 1992, p. 39). The authors however, were not able to confirm directionality. Instead they suggested that though previous researchers have indicated fairly consistent results wherein poor academic performance and low school aspirations may lead to early sexual activity, it is plausible that the reverse is true. Early sexual activity may be antecedent to poor academic results and low school aspirations and achievement. Still, other researchers reason that "(s)ocially and academically successful young people may be more apt to delay initiation of sexual activity but may still become sexually active later in their high school careers as it becomes more normative" (Whitbeck, et al., 1999, p.4).

Summary

While there is little research on the school contextual factors, what was done indicates a negative relationship between school goals, grades, and risky sexual intercourse behaviours. However, the majority of this research is correlational, inhibiting the ability to determine causality. Since the current research project is not longitudinal, causality is not determined. The advantage of this research project, though, is the ability

to determine the relative influence of the school context when other contextual variables are taken into account. Minimal research on this major adolescent social context stresses the importance of future research in this area.

Summary of Literature Review

The purpose of this project is to contribute to Canadian research on risky adolescent sexual intercourse. Research on six risk factors within three adolescent social contexts was reviewed and examined from two perspectives. First, a review of research on the six risk factors and general adolescent behaviours was presented. Secondly, and more specifically to the current project, a review of research about the six risk factors and adolescent risky sexual activity was discussed. The six risk factors (low parental support, low parental monitoring, high peer encouragement of risky behaviour, low peer support for no sex, low GPA and low school goals) were all found to be associated with risky sexual intercourse behaviours.

The potential outcome of engaging in risky sexual intercourse has significant effects on the life trajectory of adolescents. Based on this review it was noted that the vast majority of research on adolescent sexual intercourse behaviours was based on individual contexts. The family, school and peer context are studied the most, but these contexts are studied in isolation. There is a movement towards a more holistic understanding of adolescent behaviours (Miller et al., 1987). An examination of the adolescents' social ecology supports this approach.

This researcher was able to look at the adolescents' social ecology by examining how risk factors across three social contexts (family, school and peers) interact and

predict risky sexual intercourse behaviours (age of first sex, number of partners and condom use). The researcher will determine if one of the social contexts is more strongly associated with risky sexual behaviours or if certain contextual risk factors are consistently associated with different risky sexual intercourse behaviours.

Another benefit of this study is the examination of risky sexual behaviours with a group of adolescents experienced in sexual intercourse. By choosing to study this group, the researcher was able to explore safe and unsafe adolescent sexual practices. The researcher will be able to explore the similarities and differences within a group of sexually experienced teens.

Since most of the adolescent sexuality research reviewed compares adolescents that are sexually active with non-sexually active teens, this project will contribute to a better understanding of teens that have sexual intercourse experience. As knowledge of the risk factors associated with this group increases, programs can better target risky sexual intercourse behaviours and more effectively develop programs on adolescent safe sex practices.

The following section outlines the theoretical framework that guides this study on adolescent risky sexual intercourse behaviours.

THEORETICAL FRAMEWORK

Bronfenbrenner's Ecology Theory (1979; 1989) incorporates psychology, social, and social-cultural factors. Previous investigators have utilized this theoretical framework when examining adolescent sexual risk factors (Perkins, Luster, Villarruel & Small, 1998; Small & Luster, 1994; Smith, 1997).

Ecology theorists highlight the importance of human beings interacting with each other on many levels, in many environments/contexts. Influential factors impacting human behaviour exist within the varied social contexts. A risk factor perspective within an ecological theoretical framework categorizes risk factors into different social contexts.

Bronfenbrenner (1979) has aptly described the individual's environment as "...a set of nested structures, each inside the next, like a set of Russian dolls" (Bronfenbrenner, 1979, p.3). There are five structures or levels. These are the micro, meso, exo, macro and chronosystems (Bronfenbrenner, 1979; 1986). This research project will focus on the meso level, embedded within an ecological perspective.

A microsystem is defined as, "a pattern of activities, roles, and interpersonal relations, experienced by the developing person in a given setting with particular physical and material characteristics" (Bronfenbrenner, 1979, p.22). The family, peer group and school are each referred to as microsystems (Bronfenbrenner, 1979; 1986). While each microsystem (family, peer group and school) can be examined separately, they can also be examined simultaneously. The majority of the research reviewed has taken a microsystem approach by studying factors within the family, peer, and school setting separately. However, based on ecological theory microsystems are interconnected and can be studied from this perspective as well. The mesosystem is the ecological structure that incorporates this idea.

A mesosystem comprises the interrelations among two or more settings in which the developing person actively participates (such as, for a child, the relations among home, school, and neighborhood peer group; for an adult, among family, work, and social life (Bronfenbrenner, 1979, p.25)

Exploration of adolescent sexuality in the family microsystem may emphasize parent-adolescent interaction. A mesosytem analysis would examine how parental factors relate to factors within the school setting. How is high academic performance and low parental support associated with risky sexual intercourse? Equally plausible is an examination of the peer microsystem, whereby peer group norms and the relationship to risky sexual intercourse are examined. A mesosystem analysis would examine what happens when peers do not advocate sexual activity and have a low GPA. What is the likelihood that adolescents will be sexually active in this situation?

A premise of ecological theories is that social settings affect behaviours. It is important therefore to determine if one of the social contexts is predominantly influential in adolescent risky sexual intercourse. The theory also states behaviours, within each social setting, are interactive, influencing subsequent behaviours. This theoretical assumption is addressed by exploring the influence of cumulative risk across social contexts.

Previous researchers have established the significance of a cumulative risk factor approach in the description of risky adolescent sexual activity. While the presence of risk factors does not guarantee a negative outcome, the cumulative risk increases its probability (Small & Luster, 1994). Furthermore,"(i)ntegrating a risk factor model into an ecological frame work (cf.Bronfenbrenner, 1979; 1989) suggests there are not only multiple risk factors related to adolescent heterosexual sexual activity, but that these risk factors exist at multiple levels of the adolescent's life or social ecology" (as cited in Small & Luster, 1994, p. 183). By addressing influential factors within the family, peer and school context, significant levels of the adolescents' social ecology can be examined.

As suggested by Miller et al. (1987), the trend towards a more holistic, interconnected approach characterizes the direction of future adolescent risk research. This can be seen in varying fields of social investigation, where investigators have utilized a risk factor approach to analyze a diverse array of social problems such as drug use, alcoholism, and adolescent gambling (Newcomb, Maddahian & Bentler, 1986; Swadi, 1999). Research indicates that associating a single cause to problem behaviours may not be as constructive as an understanding of the multiple correlates in different contexts (Small & Luster, 1994).

There is a paucity of Canadian research with this theoretical perspective. Analysis from a contextual perspective will expand comprehension and knowledge about adolescent risky sexual intercourse behaviours.

The theoretical objective for this research project is based on one fundamental ecological principle, the mesosystem. A mesosystem analysis can be defined by the following questions. These are:

Mesosystem analysis:	Are cumulative risk factors (parental support, parental monitoring, peer encouragement of risky behaviour, peer support for no sex, school goals, school GPA) associated with risky sexual intercourse?
	Are any of the risk factors (parental support, parental monitoring, peer encouragement of risky behaviour, peer support for no sex, school goals, school GPA) that are part of the three social contexts (family, peers, and school) associated with risky sexual intercourse?
	Are risk factors from one of these social contexts (family, peers, and school) more closely associated with risky adolescent sexual intercourse than others?

CHAPTER THREE:

METHODS

In the previous chapter, literature on adolescent risky sexual intercourse within three contexts (family, peers, and school) was reviewed. The need for Canadian research on risky adolescent sexual intercourse was also identified. Based on the reviewed literature and the theoretical framework, three research objectives were outlined. The purpose of this chapter is to present how the research objectives will be tested.

Source of Data

The present study uses data from the Adolescent Health Survey (1999) compiled by Munro and Doherty-Poirier. This Survey was conducted in the fall of 1999. Students from the province of Alberta, Grades 7 to 12 (junior and senior high) participated in the survey.

Survey and Sample Design

The research design of the Adolescent Health Survey is a cross sectional approach. A self-administered questionnaire was used to collect the data. The respondents were asked about adolescent risky behaviours (sex, drinking, drugs, smoking, violence) and about healthy lifestyle habits (eating, sleeping, and exercise habits). For the current study, factors related to risky sexual intercourse are examined.

Munro and Doherty-Poirier (1999) chose the survey design for several reasons. One of the benefits of a self-administered questionnaire is that it allows the researchers to gather data from a large sample of respondents at relatively low cost. In this case, the researchers were able to administer the surveys in 14 schools. Each student at these

schools was surveyed. The schools were from both rural and urban areas of Alberta and were located in different socioeconomic areas.

Self-administered questionnaires ensure that all respondents get the same questions. This survey format also allows the inclusion of a long battery of questions, enabling the researcher to get more detailed information from participants. Furthermore, the anonymity of the self-administered questionnaires provides a sense of security lacking in other data collection methods that use an interviewer, thus encouraging respondents to share sensitive information (Bernard, 2000).

The convenience sample size was 2277 students, from 10 junior high schools and 4 senior high schools. The participating students were between the ages of 13 and 17. The breakdown in terms of subgroups (junior vs. senior high and male vs. female) are as follows: 76% were in junior high school (Grades 7 to 9; N=1648) and 24% were in high school (Grades 10 to 12; N=517) – 112 people did not report their grade in school. Fifty-two percent were male (N=1097) and 48% were female (N=1020) – 160 people did not disclose their gender.

Data Collection and Research Procedures

Public health nurses distributed and collected questionnaires. This avoided the problem of low response rates with mail-back questionnaires. Participants were asked to fill out the questionnaires at the same time in the same place in each school. The questionnaire was based on closed-ended questions to allow for easy and efficient data entry and statistical analysis.

An informed consent form was distributed and signed by each participant before they completed the self-administered questionnaire. The research project and consent

form were reviewed by the Board of Directors, PTA (Parent Teacher Association), the school board, principles, and teachers. Parents were also involved in the review process.

A letter outlining the survey, purpose, and content was sent to the participants' parents. Parents were given the choice to opt their teenagers out of the study. The students were also given the option to voluntarily withdraw from the study at any time without question.

Confidentiality and anonymity were of the utmost importance. To ensure anonymity students were told not to identify themselves in any way on their response sheets. Confidentiality was maintained by having school and regional health nurses administer and pick up the completed forms. The teachers and principle did not have access to the response sheets and were not present when the students completed the survey, further inhibiting the ability to identify student participants. The average time needed to complete the questionnaire ranged from 15 to 45 minutes. The response rate was 100%, excluding students who may have been sick on the day that the questionnaire was distributed.

Sample

Only those students who identified that they had engaged in sexual intercourse were chosen for this research project. This sample size is 478 adolescents, of whom 59% are males (N= 265) and 41% are females (N= 185). Twenty-eight adolescents did not disclose their gender. The majority of the respondents (60%) were in junior high (N= 274) and 40% (N= 182) were in senior high. There were 22 missing cases.

Definition of Variables

Within this study adolescents are defined as individuals between the age of 13 and 17 or in Grades 7 to 12. Three dependent variables (age of first sexual intercourse, number of partners, and condom use) are examined in this study. Previous researchers have defined these three behaviours as risky sexual intercourse (Moore et al., 1998; Wellings, Field, Johnson & Wadsworth, 1994; Wellings & Mitchell, 1998).

Age of first sexual intercourse and number of partners are interval measures. The response category for age of first sexual intercourse ranges from 11 years old or younger to 17 years old or older. To identify number of sexual partners, respondents were asked how many partners they had had in their lifetime. The response category for number of partners ranges from 1 to 6 or more partners. Condom use is a dichotomous variable measured as yes/no.

The six independent variables were categorized within three adolescent social contexts: family, peers, and school. There are two variables for each context. The six independent variables are well founded in the adolescent sexuality literature.

Within the family context, the adolescents' perceptions of parental support were derived from a seven-item parental support scale developed by the present researcher. Scale development was based on various tests of validity and reliability. The statistical technique used to ensure construct validity was Varimax Factor Analysis. The scale items included in the factor analysis are listed in Appendix 2. All of the items were scored on a 4-point Likert scale. Responses ranged from strongly disagree (1) to strongly agree (4).

In order to be included as part of the scale, the factor scores must have a factor loading of at least 0.5. In order to determine the internal consistency of the scale, Pearson

R Correlation was run with a significance level at least 0.05. Chronbach's alpha will be used to determine the reliability of scale items.

The second family context variable used is parental monitoring. Parental monitoring was measured using one item. Adolescents were asked whether they agreed or disagreed with the statement, "My parent(s) keep track of where I am." The range of possible responses was from (A) Strongly Agree (B) Agree (C) Disagree (D) Strongly Disagree.

Within the peer context, a single item assessed peer risk. Adolescents' were asked, "I would do something risky if my friends encouraged me to." The range of possible responses was from (A) Never (B) Rarely (C) Sometimes (D) Most of the Time (E) Always.

Peer sexual support was measured with one item. Adolescents' were asked, "Is there support among your friends to not have sexual intercourse?" The range of possible responses was from (A) No support (B) A little support (C) A moderate amount of support (D) A lot of support (E) My friends do not talk about having sexual intercourse.

Within the school context, adolescents reported their grade point average in terms of percentages. Adolescents were asked, "What is your present academic average (approximately)?" The range of possible responses was from (A) 80-100% (B) 65-79% (C) 50-64% (D) 49% or less.

A single item was used to assess school goals. Respondents were asked, "How far do you plan to go in school?" The range of possible responses was from (A) I plan to finish high school but not go on after that (B) I plan to go to a trade school or vocational

school after high school (C) I plan to go to college after high school (D) I plan to go to university

(E) I plan to quit school as soon as I can.

Statistical Analysis

The purpose of this research project is to determine if the six risk factors characterized by three adolescent social contexts were related to adolescent risky sexual intercourse. There are three research objectives within this study:

Research Objective #1	"Are cumulative risk factors (parental support, parental monitoring, peer encouragement of risky behaviour, peer support for no sex, school goals, school GPA) associated with risky sexual intercourse?"
Research Objective #2	Are any of the risk factors that are part of the three social contexts (family, peers, and school) associated with risky sexual intercourse?
Research Objective #3	Are risk factors from one of these social contexts more closely associated with risky adolescent sexual intercourse than others?

In order to address the three research objectives, specific demographic information was presented (gender, age, and grade). Next, a risk factor index was created. The risk index was developed by adding up the number of risk factors. This index represented what percent of the sample had from zero to six risk factors.

The statistical analysis chosen to address the research objectives was multiple regression. Multiple regression is often used in the social sciences since it has the benefit of being able to deal with several independent variables, " where relationships are complex and a more detailed sense of how variables work together is

necessary...multiple regression is also used to learn how well some predictor variables (X) actually do predict the criterion variable (y)" (Dunn, 2001, p. 263-264).

In this research project, stepwise regression was conducted with the risk factor index and the three dependent variables. Step wise multiple regression was also conducted with each dependent variable (condom use, number of partners, and age of first sexual intercourse) and all six independent variables (parental monitoring, support, peer sex support, peer encouragement of risky behaviors, school goals, and GPA,). Gender and age was controlled in all analyses.

Limitations

The analysis for this study is based on secondary data. As such, the researcher was limited to the questions asked and the response categories were already set. As a result, the researcher was limited to the concepts that were included in the survey. Certain characteristics within each adolescent social context could not be measured or controlled because the data was not collected. For instance, there was no information about the adolescents' ethnicity, socioeconomic status, and family size. Parental monitoring, school goals, and GPA were based on single item measures since there were no other questions to measure these concepts. Reliance on single items may limit the discussion of the relationship between these variables and risky sexual intercourse.

Also, the survey addresses the adolescents' perceptions of parental support, parental monitoring, peer relationships, academic performance, and academic aspirations. This dependence on one informant, namely the adolescent, highlights the inability to confirm directionality. However, with regards to the latter limitation, the focus of an

ecological approach is, "that what matters for behaviour and development is the environment as it is perceived rather than as it may exist in 'objective' reality..." (Bronfenbrenner, 1979, p. 30). Still, reliance on self-reports indicates issues of trust; honesty and openness must be considered in data analysis and when writing up the results and discussion sections. This is especially important considering the sensitive nature of the topic.

Another limitation arises from the type of sample and sample characteristics. First, this research project was based on a convenience sample. This type of sample limits generalizability and may increase the potential of bias because the students were not randomly selected nor randomly assigned to groups. Second, a greater proportion of the sample came from rural areas and the majority of adolescents were in junior high school. Equal proportions of junior and senior high schools and equal proportions of rural and urban schools may have produced different results.

CHAPTER FOUR:

RESULTS

Within this chapter findings related to the three research objectives are presented. There are seven sections. Descriptive statistics are presented in the first section. These include sample characteristics such as, percent of adolescents who have or have not had sex, gender, grade in school, condom use, number of sexual partners, and age of first sexual intercourse. In the next section, the development of the parental support scale is discussed. In the third section, details of the development of the risk factor index are presented. In the fourth section, results from stepwise multiple regression with the risk factor index are reported. In the last three sections, five, six and seven, the results from stepwise multiple regression with the three dependent variables and the six independent variables are reported.

Descriptive Statistics

As can be seen in Table 1, the majority of adolescents in this study have not had sexual intercourse (78.5%). When comparing adolescents that have had sex with those that have not had sex, there were more sexually active students in high school (35%) than in junior high school (17%) (Refer to Tables 2 and 3). For this research project I am interested only in the 21.5% of adolescents who have had sexual intercourse. Tables 4 through 10 are based on this sub sample.

As reported in Table 6, the majority of sexually active adolescents surveyed were male and in junior high (67%). In high school, females were the majority (52%). Overall,

the highest percentages of students who have had sexual intercourse were in Grade 9 (28%) (refer to Table 5).

Table 1: Distribution of Students Who Have or Have Not Had Sexual Intercourse

	Frequency	Percent
Had sexual intercourse	478	21.5%
Not had sexual intercourse	1750	78.5%

N= 2228

Table 2: Distribution of Junior High Students Who Have or Have Not Had Sexual Intercourse According to Gender

	Junior High School	
	Males	**Females**
Had sexual intercourse	175 (21.3%)	89 (12.4%)
Not had sexual intercourse	647 (78.7%)	629 (87.6%)

N=1540

Table 3: Distribution of Senior High Students Who Have or Have Not Had Sexual Intercourse According to Gender

	Senior High School	
	Males	**Females**
Had sexual intercourse	86 (36.4%)	95 (34.7%)
Not had sexual intercourse	150 (63.6%)	179 (65.3%)

N=510

Table 4: Distribution of Students Who Have Had Sex According to Gender

	Frequency	Percent
Male	265	58.9%
Female	185	41.1%

N=450

Table 5: Distribution of Students Who Have Had Sex According to Gender by Grade

	Grade Seven	Grade Eight	Grade Nine	Grade Ten	Grade Eleven	Grade Twelve
Male	36	61	78	29	35	22
	(72%)	(69%)	(62%)	(46%)	(51%)	(45%)
Female	14	28	47	34	34	27
	(28%)	(31%)	(38%)	(54%)	(49%)	(55%)
Total	50	89	125	63	69	49
	(100%)	(100%)	(100%)	(100%)	(100%)	(100%)

N=445

Table 6: Distribution of Students Who Have Had Sex According to Gender by Junior High and High School

	Junior High (Grades 7-9)	High School (Grades 10-12)
Male	175 (66%)	86 (48%)
Female	89 (34%)	95 (52%)
Total	264 (100%)	184 (100%)

N=445

Within Table 7, Table 8, and Table 9 sample characteristics such as percent of adolescents that have used a condom, the number of sexual partners, and age of first sexual intercourse are presented. The majority of sexually active students in this sample (85%) did not use a condom all of the time (inconsistent condom use) when they had

sexual intercourse (Table 7). Fifteen percent of adolescents did use a condom all of the time (consistent condom use).

Table 8 shows the distribution of the number of sexual partners. Most males were concentrated at the two extremes on the table: (n=211) had one or two partners and (n=102) had six or more partners. The mean number of sexual partners for both males and females was three. Seventy-seven percent of the sample had their first sexual intercourse experience when they were 14 years old or younger. The mean age of first sexual intercourse was 13 years old for males and 14 years old for females (see Table 9).

There are more gender differences than similarities when examining risky sexual intercourse variables. More females did not use a condom (86%) than males (83%). Though this difference is small, the high percentages indicates similar risky sexual intercourse behaviours across genders (Table 7).

Many of the adolescents had one sexual partner (38%). A higher percent of females had one partner (43%) when compared with males (33%). The percent of adolescents who reported one sexual partner and those who reported six or more sexual partners was similar for males. Thirty-three percent of males reported one partner, while 31% reported six or more partners. This similarity was not found with adolescent females. The majority of the females reported one sexual partner (43%), with only 17% reporting six or more (Table 8). In terms of number of sexual partners, more males in this sample reported risky sexual intercourse behaviours.

Overall, males reported an earlier age of first sexual intercourse. Twenty-seven percent of males state their sexual debut at 11 years or younger compared with 14% of females. The majority of females reported first sexual intercourse at the age of 14 (Table 9). When compared with the reviewed literature, a reported age of 14 for first sexual debut is quite young. Thus, both males and females are engaging in risky sexual behaviours, with the males in this sample engaging in more sexual risks.

Table 7: Distribution of Students According to Gender by Condom Use

	Condom Use Yes	Condom Use No	Total
Male	42 (16.2%)	217 (83.8%)	259 (100.0%)
Female	26 (14.1%)	159 (85.9%)	185 (100.0%)

N=444

Table 8: Distribution of Gender by Number of Sexual Partners

	1 partner	2 partners	3 partners	4 partners	5 partners	6 plus partners	Total
Male	76 (32.9%)	28 (12.1%)	26 (11.3%)	20 (8.7%)	9 (3.9%)	72 (31.2%)	231 (100.1%)
Female	75 (42.9%)	32 (18.3%)	19 (10.9%)	11 (6.3%)	8 (4.6%)	30 (17.1%)	175 (100.1%)

Note: Percentages do not add to 100.0% due to rounding.
N=406

Table 9: Distribution of Students According to Age of First Sex by Gender

	11 years or younger	12 years	13 years	14 years	15 years	16 years	17 years or older	Total
Male	71	51	43	51	20	12	17	265
	(26.8%)	(19.2%)	(16.2%)	(19.4%)	(7.5%)	(4.5%)	(6.4%)	(100.0%)
Female	25	24	31	47	35	18	5	185
	(13.5%)	(13.0%)	(16.8%)	(25.4%)	(18.9%)	(9.7%)	(2.7%)	(100.0%)

N=450

Development of the Parental Support Scale

A Parental support scale was created in order to examine the relationship between parental support and adolescent risky sexual intercourse. This was done by first testing the face validity of the scale. Next, the construct validity, internal consistency, and reliability were assured.

Face Validity

The face validity of the scale was maintained by relying on experts in the field of adolescent research. Experts were asked to identify questions in the Adolescent Health Survey that would represent parental support. Six items were selected:

- My parent(s) care about me very much.
- I enjoy spending time with my family.
- What my family thinks of me is very important.
- My family supports me in the decisions I make.
- I can talk to my mother/father about anything.

- My parent(s) trust me.

Construct Validity

Varimax factor analysis was chosen to assure construct validity. Only items with a factor loading of .5 or higher were retained. The chosen six survey items met this criteria. Refer to appendix 3 for the component matrix designed for the scale construction of parental support.

Internal Consistency

Pearson R Correlations were used to measure the internal consistency of the scale. All six scale items were low to moderately correlated at or below the 0.01 level of significance. The level of association ranged from .326 to .560. Refer to Appendix 2 for all of the Pearson R Correlations for chosen items in the parental support scale.

Reliability

In order to establish if the parental support scale was reliable, Cronbach's alpha was determined. The reliability score (alpha) of the six factors making up the parental support scale was .84. A score of .84 indicates that scale items were highly related to each other representing high level of consistency among various items.

Development of the Risk Factor Index

In order to describe how many of the six contextual risk factors adolescents have in their lives, a risk factor index was developed. In the risk factor index, all risk factors were scored in the same manner: 0 if the risk factor criterion was not met (i.e., parental

support was high) and 1 if the criterion was met (i.e., parental support was low). The numbers of ones were then totaled. The use of dichotomous variables to develop an aggregated risk index has been reported in previous adolescent risk research (Ensminger, 1990; Farrell, Danish, Howard, 1992; Galambos and Titlton-Weaver, 1998).

The reviewed literature and the use of frequencies with a median split to view the natural distributions for the six independent variables helped the researcher determine cut-off points for risk. Whenever appropriate, the median served as the cut-off point. For some of the variables (parental monitoring, peer support for no sex, and school goals) this did not make intuitive sense and another cut-off point was chosen.

For parental monitoring, the median response was moderate monitoring. This was then chosen as the cut-off point for risk. The responses, "no monitoring" and "low monitoring" were considered risk factors. For the parental support scale, the median was moderate parental support. This was then set as the cut-off point for risk. The response "low parental support" was considered to be a risk factor. For peer encouragement of risky behaviours, the median response was sometimes. This was the cut-off point for risk. The responses, "most of the time" and "always" were considered risk factors. For peer support for not having sexual intercourse, the median response was "a little support." The cut-off for risk was set at moderate support. The responses, "a little support" and "no support" were considered risk factors. For school goals, the median response was college. The cut-off for risk was set at trade school. The responses, "finish high school" and " plan to drop out" were set as risk factors. For grade point average (GPA), the median response was "65-79%." This was set as the cut-off for risk. The responses, "50-64%" and "49% or less" were established as risk factors (refer to Appendix 2 for survey

questions). Standardizing the six variables was a necessary step in the development of the risk index. It is important to note that,

> the specific cut off points used to define risk is necessarily somewhat arbitrary... [considering] consensual definitions do not exist...and are unlikely to arise until researchers use standardized questions and measures of risk behaviour across studies" (Galambos et al., 1998, p. 16).

Table 10 (below) displays the distribution of the sample that had from zero to six risk factors based on gender. The majority of the sample (69%) had two or fewer risk factors. But adolescent males had a higher percent of three or more risk factors (36%) than females (22%).

Table 10: Number of Risk Factors by Gender for Adolescents Who Have Had Sex

	0	1	2	3	4	5	6	Total
Male	13	61	80	52	19	10	4	239
	(5.4%)	(25.5%)	(33.5%)	(21.8%)	(7.9%)	(4.2%)	(1.7%)	(100.0%)
Female	23	71	52	20	13	4	0	183
	(12.6%)	(38.8%)	(28.4%)	(10.9%)	(7.1%)	(2.2%)	(0.0%)	(100.0%)

N=422

Descriptive Statistics Summary

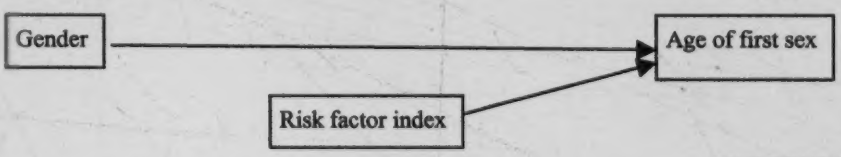
More than half of the adolescents in this sexually active sample were male and were in junior high school. Many of the adolescents were engaging in risky sexual intercourse (young age of first sex, multiple sexual partners, and not consistently using a condom). While risk factors were not prominent for the majority of adolescents in this sample, the percentage of three or more risk factors is higher for adolescent males (36%) than females (22%).

RESEARCH OBJECTIVES

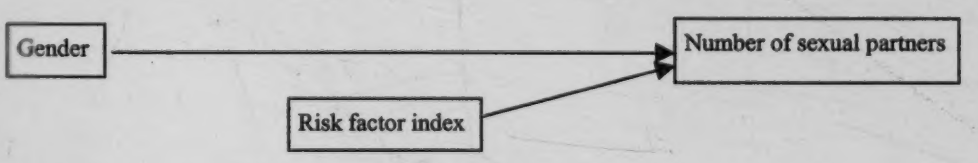
There are three research objectives within this project. Each of the dependent variables (age of first sex, number of partners, and condom use) were examined in a separate analysis. The six risk factors from three social contexts (family, peers, and school) include low parental monitoring, low parental support, high peer encouragement of risky behaviour, low peer support for no sex, low GPA, and low school goals. These six risk factors were used to create the risk factor index. Risky sexual intercourse is defined by three dependent variables: condom use, age of first sexual intercourse, and number of sexual partners.

The hypothesized models are as follows (see Model 1, 2, 3, 4, 5 and 6 below):

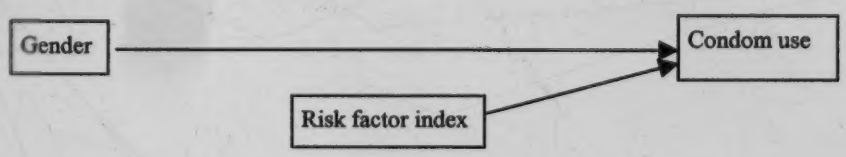
Model 1: Risk Factor Index, Controlling for Gender by Age of first sex



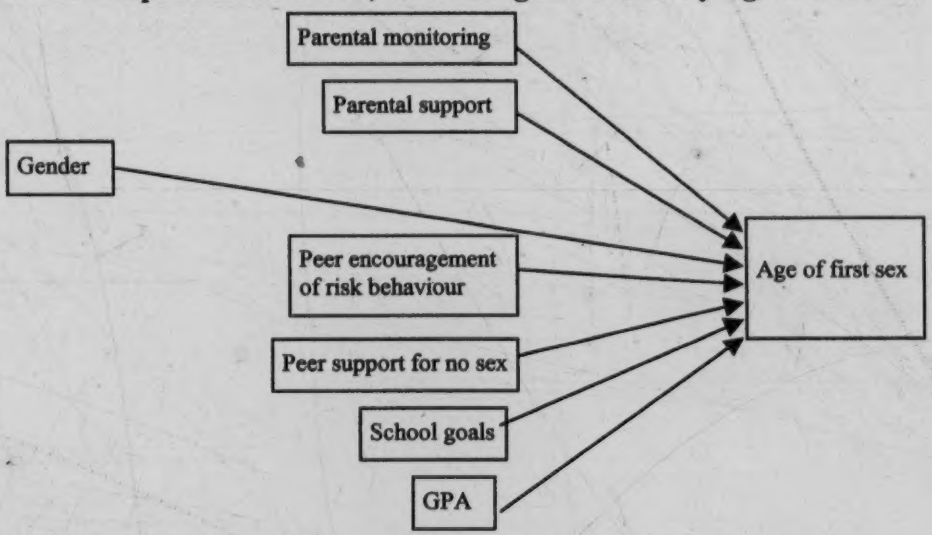
Model 2: Risk Factor Index, Controlling for Gender by Number of Sexual Partners



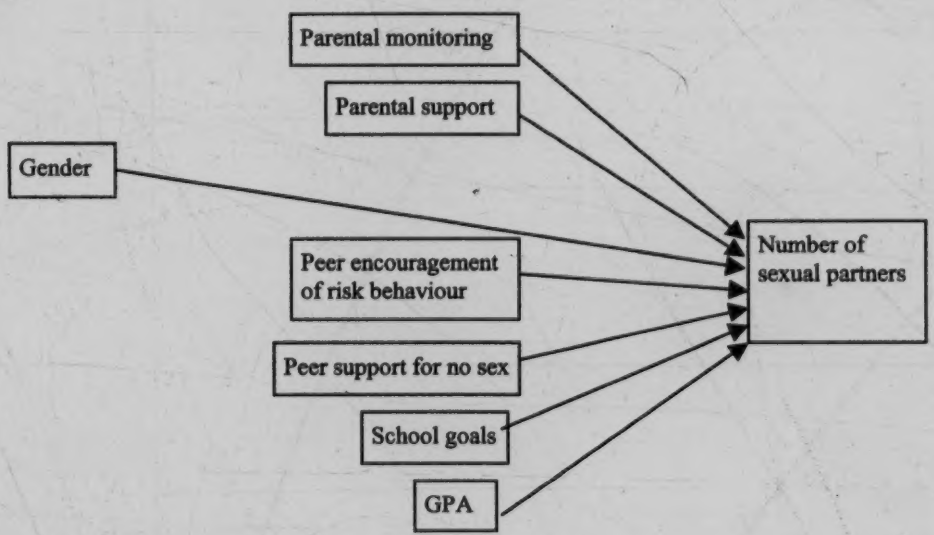
Model 3: Risk Factor Index, Controlling for Gender by Condom Use



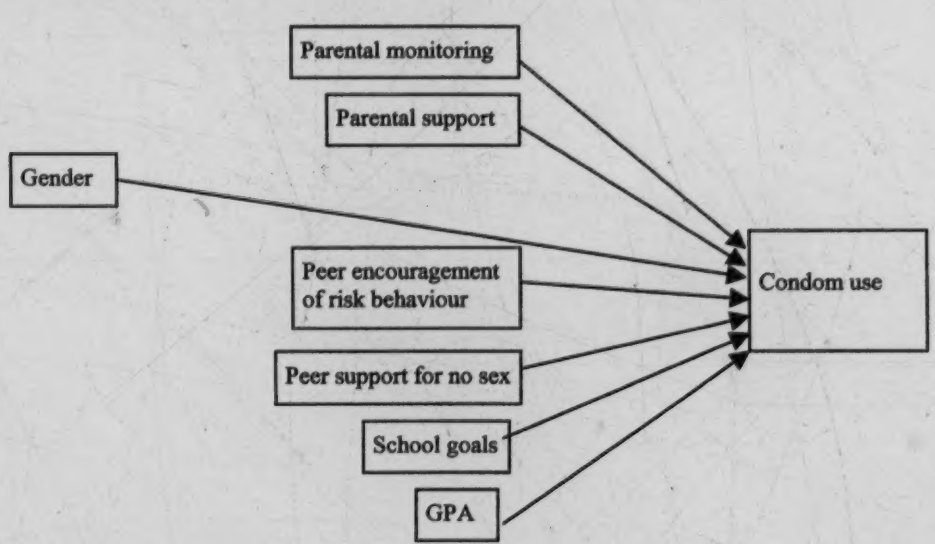
Model 4: Six Independent Variables, Controlling for Gender by Age of First Sex



Model 5: Six Independent Variables, Controlling for Gender by Number of Sexual Partners



Model 6: Six Independent Variables, Controlling for Gender by Condom Use



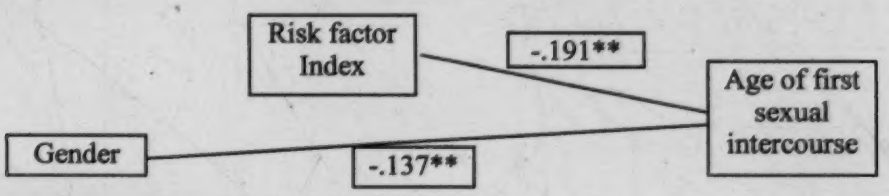
The regression models with the significant risk factors as they are related to the research objectives are presented in Models 7, 8 and 9 (see below).

Research Objective #1

"Are cumulative risk factors associated with risky sexual intercourse?"

In order to test research objective #1, step wise multiple regression with the risk factor index and the three dependent variables was conducted. In all of the regression analyses, gender was recoded as a dummy variable where male =1 and female = 0.

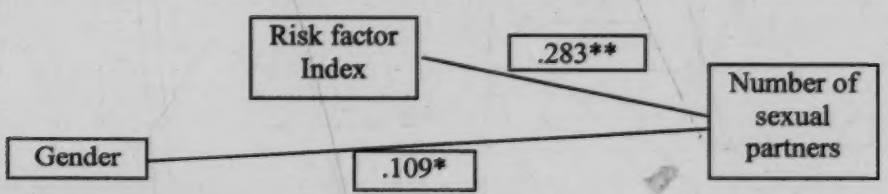
Model 7: Risk Factor Index Controlling for Gender by Age of First Sexual Intercourse



Standardized beta values and significance levels are reported in the model.
** Indicates significance at alpha level 0.01
*Indicates significance at alpha level 0.05
R^2_a = .062
F = 14.807
Sig = 0.000
N= 421

Knowing the adolescents' gender and the presence of cumulative risk factors explains six percent of the variability in age of first sexual intercourse (Model 7). The adjusted R square (R^2_a) is .062. Results indicate that the risk factor index is negatively related to age of first sexual intercourse. As the risk factors increase, the likelihood that adolescents will have their first sexual experience at a younger age increases. Gender is also negatively related to age of first sex. Males are more likely to have their first sexual experience at a younger age than females.

Model 8: Risk Factor Index, Controlling for Gender by Number of Sexual Partners



Standardized beta values and significance levels are reported in the model.
** Indicates significance at alpha level 0.01
*Indicates significance at alpha level 0.05
R^2_a = .100
F = 23.621
Sig = 0.000
N= 405

Knowing the adolescents' gender and the presence of cumulative risk factors explains 10% of the variability in number of sexual partners (Model 8). The adjusted R square (R^2_a) is .100 There is a positive relationship between the risk factor index and number of sexual partners. As risk factors increase, the probability that adolescents will have multiple sexual partners also increases. There is a positive relationship between gender and number of sexual partners. Males are more likely to have multiple sexual partners.

Model 9: Risk Factor Index Controlling for Gender by Condom Use

There are no statistically significant findings between the risk factor index and condom use. Gender is also not related to condom use.

Summary of Findings for Research Objective #1

When considering age of first sexual intercourse and number of sexual partners, the more risk factors present in an adolescent's life, the more likely they are to engage in a earlier age of first sex and report multiple sexual partners. The risk factor index, thus cumulative risk, is not related to condom use. Gender is related to risky sexual intercourse. Males are more likely to report a younger age of first sex and to have multiple sexual partners.

Research Objective # 2

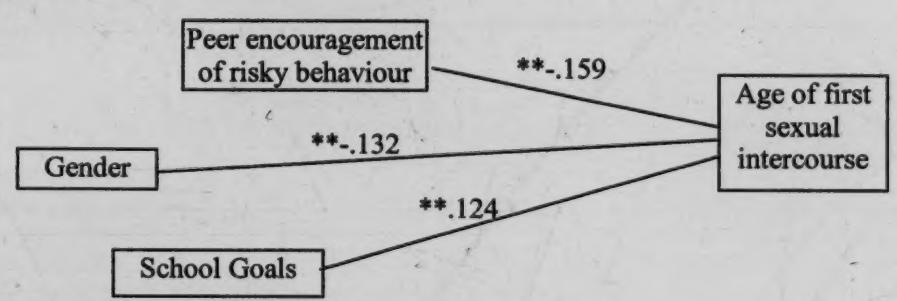
"Are any of the risk factors that are part of the three social contexts (family, peers, and school) associated with risky sexual intercourse?"

Research Objective #3

"Are risk factors from one adolescent social context (family, peers, and school) more closely associated with risky adolescent sexual intercourse than the others?"

In order to test research objective #2 and #3, step wise multiple regression with the six independent variables and the three dependent variables was conducted. Gender was controlled for in all regression analyses.

Model 10: Six Risk Factors, Controlling for Gender by Age of First Sexual Intercourse



Standardized beta values and significance levels are reported in the model.
** Indicates significance at alpha level 0.01
*Indicates significance at alpha level 0.05
R^2_a = .074
F = 11.494
Sig = 0.000
N= 435

Two out of six risk factors plus gender are significantly related to age of first sexual intercourse (Model 10). Knowing the adolescents' gender, their school goals, and whether their peers encouraged risky behaviour explains seven percent of the variability in age of first sexual intercourse. The adjusted R square (R^2_a) is .074.

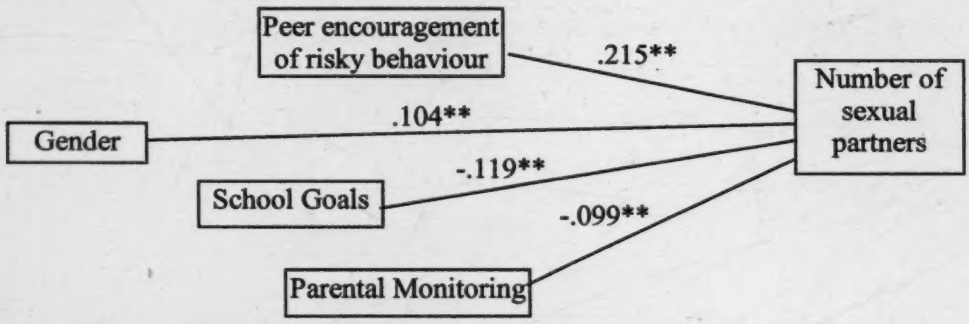
There is a negative relationship between peer encouragement of risky behaviours and age of first sexual intercourse. The more peers encourage risky behaviours, the more

likely it is that adolescents will have their first sexual intercourse at a younger age. School goals are positively associated with age of first sexual intercourse. Adolescents that have lower school goals are more likely to have their first sexual intercourse experience at a younger age. Gender is negatively related to age of first sexual intercourse. Males are more likely to report a younger age of first sex than were females.

When the standardized beta coefficients are compared, the risk factor from the peer context is more closely associated with an earlier age of first sexual intercourse. The beta value for peer encouragement of risky behaviour is -.159. The next closest beta value is for gender. Beta for gender is. -.132. Beta for school goals follows closely at .124.

In this analysis, peer encouragement of risky behaviours is the strongest predictor for age of first sexual intercourse. The more risky behaviours are encouraged, the more likely adolescents will have an earlier age of first sex. The second influential factor is the adolescents' gender. Males are more likely to have sex at a younger age than females. School goals are the last predictor. Adolescents with low school goals are more likely to have sex at a young age. However, since the beta values for gender and school goals are close, both variables account for a similar amount of change in the dependent variable, age of first sexual intercourse.

Model 11: Six Risk Factors, Controlling for Gender by Number of Sexual Partners



Standardized beta values and significance levels are reported in the model.
** Indicates significance at alpha level 0.01
* Indicates significance at alpha level 0.05
R^2_a = .099
F = 12.112
Sig =0.000
N= 405

Three out of six risk factors and gender are significantly related to number of sexual partners (Model 11). Knowing the adolescents gender, if their peers encouraged risky behaviour, school goals, and parental monitoring levels explains 10% of the variability in number of sexual partners. The adjusted R square is (R^2_a) is .099.

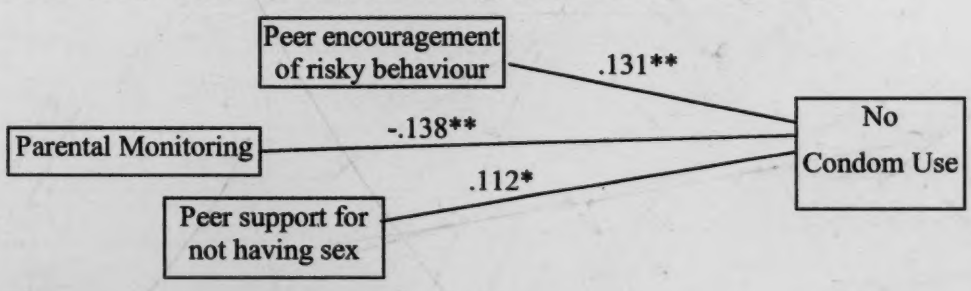
Peer encouragement of risky behaviours is positively related to number of sexual partners. The more peers encourage risky behaviours, the more likely the adolescent will have a higher number of sexual partners. School goals are negatively associated with number of sexual partners. Adolescents that reported low school goals also reported a higher number of sexual partners. Parental monitoring is negatively related to number of sexual partners. A higher number of sexual partners is associated with lower levels of parental monitoring. Gender is positively related to number of sexual partners. The males in this sample were more likely to report multiple sexual partners.

When the standardized beta coefficients are compared, the peer context is more closely associated with number of sexual partners. The beta value for peer

encouragement of risky behaviour is .215. Beta for school goals is -.119, gender is .104 and parental monitoring is -.099.

A risk factor from the peer context is more closely associated with number of sexual partners. Peer encouragement of risky behaviour is the strongest predictor. As peer encouragement of risky behaviours increased so did the likelihood that adolescents would have multiple sexual partners. The second influential risk factor is from the school context. Low school goals predicted multiple sexual partners. The male gender is the third predictor. Males were more likely to have multiple partners. The last influential factor is parental monitoring. As monitoring levels decreased, adolescents were more likely to have multiple partners. Since the beta values for parental monitoring and gender are so close, both factors account for a similar amount of change in the dependent variable, number of sexual partners.

Model 12: Six Risk Factors, Controlling for Gender by Condom use



Standardized beta values and significance levels are reported in the model.
** Indicates significance at alpha level 0.01
* Indicates significance at alpha level 0.05
R^2_a = .040
F = 7.027
Sig = 0.000
N= 435

Three out of six risk factors are significantly related to condom use (Model 12). Knowing the adolescents parental monitoring levels, whether their peers encouraged risky behaviour, and whether there was peer support for no sex, explains four percent of the variability in condom use. The adjusted R square (R^2_a) is 0.040.

It is important to note that condom use was recoded in all of the analyses with condom not used all of the time = 1 and condom used all of the time =0. Parental monitoring is negatively related to condom use. Adolescents that reported not using a condom were more likely to also state low parental monitoring levels. Peer encouragement of risky behaviours is positively related to not using a condom all of the time. Adolescents that did not use a condom all of the time were more likely to report higher levels of peer encouragement of risky behaviours. Peer support for not having sex is positively related to condom use. The more peer support there was for not having sexual intercourse, the more likely the adolescent chose not to use a condom all of the time.

When the standardized beta coefficients are compared, the family context (parental monitoring) is more closely associated with not using a condom all of the time. The beta for parental monitoring is -.138. Beta for peer encouragement of risky behaviour is .131 and .112 for peer support for no sex.

A risk factor from the family context is the strongest predictor for condom use. Low parental monitoring levels are associated with not using a condom all of the time. The next influential factor is from the peer context. As peer encouragement of risky behaviours increased, so did the likelihood that adolescents would not use condoms consistently. The last predictor is also from the peer context. As peer support for no sex

increased, adolescents were less likely to use a condom all of the time. Since the risk factors (parental monitoring and peer encouragement of risky behaviours) have similar beta values, both risk factors account for a similar amount of change in the dependent variable, condom use.

Summary of Findings for Research Objectives #2 and #3

Research Objectives (Dependent variable: age of first sex):

Risk factors from all three adolescent social contexts are not associated with age of first sexual intercourse. Instead, two out of six risk factors plus gender were found to be significantly associated. The risk factors are from the peer and school context; specifically, high peer encouragement of risky behaviour and low school goals are related to a younger age of first sex.

Of the two contexts, the risk factor from the peer context is more strongly associated with a younger age of first sex. Peer encouragement of risky behaviours is the most influential risk factor. The more peers encouraged risky behaviours, the more likely adolescents were to report an early age for sexual debut. Also, males were more likely to report an earlier age of first sexual intercourse. Seven percent of the variance is explained in this model.

Research Objectives (Dependent variable: number of sexual partners):

Risk factors from all three adolescent social contexts are not associated with number of sexual partners. Three out of six risk factors plus gender are significantly associated. From the family context (low parental monitoring), peer context (high peer encouragement of risky behaviour) and the school context (low school goals) are all

related to multiple sexual partners. Also, males were more likely to report multiple sexual partners.

A risk factor from the peer context is the strongest predictor for number of sexual partners. Peer encouragement of risky behaviour is the most influential risk factor. High peer encouragement of risky behaviours is associated with multiple partners. Low school goals are the next strongest predictor of multiple partners. Lastly, the male gender and low parental monitoring levels account for a similar amount of change in the dependent variable, number of sexual partners. Ten percent of the variance is explained in this model.

Research Objectives (Dependent variable: condom use):

Risk factors from all three social contexts are not associated with condom use. Instead, three out of six risk factors are significantly associated. The risk factors are from the peer and school contexts. The significant factors predicting inconsistent condom use are low parental monitoring, high peer encouragement of risky behaviour, and high peer support for not having sex

Risk factors from both the peer and school contexts (low parental monitoring and high peer encouragement of risky behaviours) are the most influential predictors of inconsistent condom use. Four percent of the variance is explained in this model.

CHAPTER FIVE: DISCUSSION

Adolescent risky sexual intercourse is an important social issue both at policy and program levels. Current research on condom use, multiple partnering, and age of first sexual intercourse among the adolescent population will inform health policy makers and those who develop sexual health programs for adolescents.

The benefit of using an ecological perspective is that it allows for a broad examination of risk factors within adolescent social contexts. The current trend in adolescent research is to utilize a more holistic approach wherein the adolescents' social ecology can be examined. This research project is based on this premise. In order to support a holistic approach, a variety of risk factors were selected and adolescent risky sexual intercourse was not defined as a singular behaviour. Instead, risky sex was defined as early age of first sex, multiple sexual partners, and inconsistent condom use.

The sample chosen for this study provides a unique look into the lives of sexually experienced adolescents and sexual decision-making behaviours. Unlike the majority of adolescent sexual health research, this researcher examined only adolescents that have had sexual intercourse. A comparison group of adolescents not yet sexually experienced was not included. This provided the researcher with the opportunity to explore safe and unsafe sexual intercourse behaviours and to truly examine whether there are similarities and differences within this group of sexually experienced adolescents. The purpose of this research project is to uncover factors specifically associated with adolescent risky sexual intercourse. The findings from this project both support the literature reviewed and highlight areas where inconsistencies exist.

It was found that a similar percentage of adolescents report sexual intercourse experience as suggested in the literature. Approximately 25% of Canadians will have had sexual intercourse by the age of 16 (McKay, 2000). In this project, 21.5% of the sample had experienced sexual intercourse. The age range in this sample was adolescents 13 to 17 years old. What is surprising is how many of these adolescents were engaging in sex at a young age.

The majority of young Canadians initiate sexual intercourse between 16 and 19 years of age (Maticka-Tyndale, 1997). Previous research has shown that the average age of first sex is16 and 17 for males and females respectively (Leigh, Morrison, Trocki, & Temple, 1994; Seidman & Rieder, 1994). For males in this project, the mean age of first sex was 13 years old. Females reported an older age of first sex. The mean age for females was 14 years old.

Thirteen years old is when an adolescent first becomes a teenager. This is a significant time in their lives. The fact that many of them have reported their sexual debut at this age points to the need to monitor sexual experience during early school years and to further explore this stage in life. The experiences and circumstances before an adolescent becomes a teenager may help explain sexual decision-making as a teenager. This is especially true for this sample considering 27% of the males reported experiencing sexual intercourse when they were 11 years old or younger. The majority of females reported their age of first sex at 14 years old. While both ages for first sex are young, males are far more experienced in risky sex.

Past research indicates adolescents tend to experience first sex during high school (Maticka-Tyndale, 1997). This was not always the case in this project. Though many of

the sexually active females were in high school (52%), the majority of sexually active males were in junior high school (67%).

Caution is warranted when interpreting these results considering the unequal distribution in the sample. There were more males in this sample (59%) and most of them were in junior high school (67%). Young adolescent males are over represented. If the sample were more equally represented, many of the respondents would be older and their sexual debut may have occurred at a later age. Also, in any survey about sexual behaviour, there is the possibility that participants are not honest or accurate in their self-reported response (Haveman and Lehitnen, 1986).

Most of the sexually experienced adolescents were in Grade 9, their last year of junior high school. This finding supports the claim that often engagement in adolescent risk behaviours occurs during critical transition points such as moving from junior high to high school (National Institute of Drug Abuse [NIDA] 2001; Stevens, P., & Griffin, J, 2001).

Such an early age of first sex identifies this group of adolescents at increased risk and vulnerability of engaging in further risky sexual behaviours. Research indicates the earlier adolescents engage in sexual intercourse, the more likely they are to have multiple sexual partners and to not use a condom (deGaston, Jensen & Weed, 1995; Canadian Association for Adolescent Health, 1992). There is serious concern for the potential negative long-term impact of early initiation on future emotional and physical development and interpersonal relationships.

Gender differences are found in this study. More males reported multiple sexual partners than females and more males engaged in first sex at a younger age. These findings are confirmed by previous research (de Gaston, Jensen, & Weed, 1995).

A similar percent of males that reported one sexual partner (33%) also reported six or more sexual partners (32%). This was not the case for the females. The majority of females (43%) reported one sexual partner with 17% reporting six or more partners. Males were far more likely to engage in risky sexual intercourse with multiple partners.

Previous researchers from the Canadian National Population Health Survey (1996) found that 29.4% of males, 15-19 years of age, had more than one sexual partner in the past 12 months. Females within the same age range had lower rates, with 21.8% reporting more than one sexual partner. This sample included adolescents that have and have not had sexual intercourse (Maticka-Tyndale, Barrett & McKay, 2000). The findings from this research project indicate that 67% of males (ages 13 to 17) had more than one sexual partner and 57% of females (ages 13 to 17) had more than one partner.

Since this researcher examined only adolescents that have had sexual intercourse, this may account for the large difference in percentage of adolescent males and females that report multiple sexual partners. However, this is a young sample with the majority of sexually active adolescents in junior high school. Thus, even though the comparison levels between studies are different (all adolescents versus only those who have had sex) the researchers' findings indicate these adolescents were engaging in a variety of risky sexual intercourse behaviours at alarming rates. These findings stress the need for further research with only adolescents that have had sexual intercourse experience. As more

research is conducted with this group, definitive statements can be made when comparing rates of multiple sexual partners.

Consistent with the literature, the majority of adolescents in this project were not using condoms all of the time. Eighty-three percent of males and 86% of females reported inconsistent condom use. These rates are extremely high when compared with previous research.

In past research, when Canadian adolescents were asked if they used condoms sometimes or each time, 19% of males and 32% of females (age 15-19) stated they used condoms sometimes. (Maticka-Tyndale, 1997). Sixty-six percent of males (age 15-19) and 47% of females (age 15-19) reported using condoms each time. Past research and the findings from this study indicate a higher percentage of females report inconsistent condom use. However, the gender difference reported in this study comparing percent of males and females who do not use condoms consistently is not as strong as in previous research.

In this project, condom use was assessed with a single item measure as a yes or no response. The adolescents were asked if they used condoms all of the time. If these adolescents were using condoms sometimes, they may have reported that they did not use condoms all of the time. There is no way to determine how these adolescents interpreted this question or how many of them used condoms sometimes. Having only two response categories, yes or no, may help to explain why such a high percent said no to consistent condom use.

Previous researchers have indicated that younger sexually active adolescents are more likely to report condom use than are their older peers. Older adolescents are more

likely to be in a long-term committed relationship and do not see the need for condoms. They are more likely to use birth control pills instead of condoms (Civic, 1999). Since relationship questions were not asked in this project, the researcher cannot determine if adolescents were in short or long-term relationships. Furthermore, the only contraceptive question asked concerns condom use; thus whether they used another birth control method cannot be assessed.

High rates of multiple partners, large percentages of teens not using condoms consistently, and early ages for first sex suggest there is something unique about this sample that places them at higher rates than previously reported for risky sexual intercourse behaviours.

The theoretical assumption from Ecology Theory tested in this study is based on a mesosystem analysis. The premise of a mesosystem analysis is that human behaviour can best be understood by examining the interaction of factors from different social contexts as they relate to human behavior. In this study, analysis of risk factors from different social contexts (family, peer, and school) was conducted to determine which contextual risk factors strongly predicted risky adolescent sexual behaviours (early age of first sex, multiple sexual partners, and inconsistent condom use).

The results indicate that some of the contextual risk factors chosen in this study are related to adolescent risky sex. All variables in the three social contexts are not significantly associated with all three types of risky adolescent sexual intercourse behaviours.

The contextual risk factors associated with age of first sexual intercourse come from the peer and school context. Reporting multiple number of sexual partners is

associated with all three social contexts: family, peers, and school. The contextual risk factors that predicted inconsistent condom use come from two of the social contexts, family and peers.

When the impact of cumulative risk is assessed, an interesting picture arises. Though this sample engaged in a variety of risky sexual intercourse behaviours, the presence of the chosen six risk factors associated with risky sex was not strong. The risk factor index indicates that the majority of the sample (69%) had two or fewer risk factors. Thirty-five percent of males however, had three or more risk factors. A lower percentage of females (22%) reported three or more risk factors.

When the predictive value of the risk factor index is tested with risky adolescent sexual intercourse, significant relationships are found for two of the three dependent variables. The risk index is associated with age of first sex and number of partners. As the presence of risk factors increases there is an increased chance that adolescents engaged in sex at a younger age or that they have multiple sexual partners. The risk index is not associated with condom use.

Findings show a risk factor from the peer context to be the most strongly associated factor predicting age of first sex. High peer encouragement of risky behaviour is related to a younger age of first sex. The male gender is the next influential variable with males more likely to have reported their sexual debut at a younger age than females. Low school goals is the last predictor. Adolescents with low school aspirations are more likely to report an earlier age of first sex.

According to this study, prevention programmers hoping to delay age of sexual onset should focus on males in particular, and peer group norms, specifically exploring

how adolescents can deal with peer pressure and fostering a strong sense of future school goals and ambitions.

A risk factor from the peer context is also the strongest predictor of number of sexual partners. High peer encouragement is associated with multiple sexual partners. The second most influential risk factor is low school goals. Low parental monitoring is the third factor and the male gender is the last influential factor.

Programs targeting sexually active teens and sexual decision-making regarding number of sexual partners should focus on peer group norms and the skills adolescents need to address peer pressure. Fostering a strong school orientation and the importance of school goals would also be beneficial as well as informing parents of their parental monitoring role. Special focus on males is worthwhile also.

Risk factors from two social contexts (family and peers) are the strongest predictors for inconsistent condom use. High peer encouragement of risky behaviour and low parental monitoring are associated with inconsistent condom use. High peer support for no sexual intercourse is also associated with inconsistent condom use.

The peer support for no sex findings is interesting in that the results are counterintuitive. The researcher anticipated low peer support to be associated with inconsistent condom use. Considering all of the adolescents in this sample have had sexual intercourse, when there is high peer support for no sex, the researcher assumed that these adolescents would be more likely to engage in safer sex practices and to report using a condom all of the time. It is unclear why the opposite occurred. Perhaps many of the teens in this sample were engaging in unplanned sexual intercourse and contraceptives were unavailable to them. Maybe most of these teens believed that as long

as they used condoms sometimes, they were practicing safe sex. The findings from this research project emphasize the importance of further research on condom use behaviours and attitudes with adolescents experienced in sexual intercourse.

Based on the findings of this project, sexual health programmers that intend to increase consistent adolescent condom use should focus on peer group norms. How to deal with peer pressure will be an important program component. Incorporating parental monitoring practices would also be a valuable program element.

There is a need for a broad framework in sexual health programming. A contextual risk factor framework that includes sections on parenting practices, peer group norms, and school factors has promise as long as the programs are targeted. There are both similarities and differences within this adolescent group. A blanketed approach in sexual health programming that treats risky sexual intercourse as a homogenous behaviour would not be the most effective method.

This researcher found that each risky sexual intercourse behaviour (earlier age of first sex, multiple sexual partners, and not using condoms consistently) is associated with different risk factors from different social contexts. These findings point to differences within this group of teens who report sexual intercourse experience.

Overall, however, a risk factor from the peer context, high peer encouragement of risky behaviour, is significantly associated with all three definitions of adolescent risky sexual intercourse. This risk factor is not always the strongest predictor, but there is always an influential relationship between peer encouragement of risky behaviour and risky sexual intercourse behaviours. The role of peer pressure is the greatest similarity with this group of adolescents experienced in sexual intercourse.

What is interesting with this finding is that often perceptions of peer behaviours are more predictive than actual behaviours (Gibson & Kempf, 1990; Millstein & Mosckicki, 1995; Sha & Zelnick, 1981; Whitaker et al., 1999). Therefore, in reality, if a small percentage of adolescents are engaging in sexual intercourse, but teens perceive a higher percent, this may influence their own decision to engage in sexual activity, regardless of other factors present in their lives. Furthermore, what peers perceive as risky behaviours may also be highly influential impacting what behaviours adolescents are more likely to engage in.

Predominance of the peer context in this project supports past research. Researchers who have analyzed the impact peers and parents have on adolescent sexuality have found that peer influence is more strongly associated with the prediction of adolescent sexual behaviours (Scott & Johnson, 1993; Shah, et al., 1981). Investigators who differentiate the relation between peer-oriented adolescents and parent-oriented youths indicate that peer-oriented adolescents are more likely to engage in sexual behaviour (Owuamanam, 1983).

In this project, parental support is not significantly related to any of the risky adolescent sexual intercourse behaviours and parental monitoring is associated with only two risky sex behaviours (multiple sexual partners and inconsistent condom use).

It is important to note that while the findings are statistically significant, very little variance is explained in each of the models. When the three research objectives are tested, the variance explained ranges from 4% to 10%.

Again the uniqueness of this sample may help explain this result. One potential reason why this occurred could be the result of conducting regression analysis on a had

sex sample only. Previous researchers have used different comparison levels studying non sexually active adolescents with adolescents engaged in risky sexual intercourse.

This researcher examined adolescents with sexual intercourse experience looking at safe versus unsafe sexual intercourse behaviours. There are probably similar characteristics with adolescents that have had sexual intercourse. The variance explained would have been higher if I had chosen to compare those adolescents who had sex with adolescents who did not have sex, thereby conducting regression analysis on the whole sample.

The regression results with condom use provide the lowest explained variance (4%). The risk index does not predict condom use. Therefore, cumulative risk does not predict inconsistent condom use. The finding is surprising. When the risk factors are analyzed separately, three out of six risk factors (family and peer context) predict inconsistent condom use. Based on these findings, the presence of cumulative risk isn't influential, but specific risk factors are. The researcher could have used other risk factors that may have been more powerful predictors resulting in cumulative risk predicting condom use.

There are many possible reasons why adolescents may choose not to use condoms when having sexual intercourse. One reason could be the involvement of drugs or alcohol. Drug and alcohol use has been found to increase the occurrence of high-risk sexual behaviour in adolescents, as well as decrease the likelihood of condom use (Brown, DiClemente, & Park, 1992; "Library watch," 1996).

Youth perceptions about condom use may be another influential risk factor not accounted for in this study. Previous researchers have suggested (Anderson & Mathieu,

1998; Smith & Brown, 1998) that youth are less likely to use condoms if they feel condoms will reduce physical satisfaction or if they are self-conscious about condom use.

Significant results with little variability explained indicate that this study touches upon important similarities within this group and significant predictors for risky sexual intercourse. However, there is a need to further understand sexually active adolescents as a group first and then to compare them with their non sexually active peers. There are obviously multiple pathways to risky sexual intercourse behaviours and the inclusion of other variables would produce stronger models.

Future Research Projects

Utilizing an Ecological framework when examining risky sexual intercourse has contributed to adolescent research by uncovering significant social contexts and contextual factors that strongly predict risky sexual behaviours. By examining multiple social contexts and the interactions of various contextual factors, this study is able to explore the social ecology of adolescents with sexual intercourse experience. Supportive of previous research, the peer context and the importance of peer group norms are highlighted. The importance of the school context is apparent as well.

Research that examines the school context and adolescent sexual experience is sparse (Franzese, 1999). In this project, the school context comes out as highly influential when predicting which adolescents are more likely to initiate sex at a younger age or which adolescents are more likely to have multiple sexual partners. This study provides evidence that school factors, specifically school goals, have an influential role in adolescent sexual health. More importantly, school factors interact with contextual

factors from other adolescent social contexts. Continued study of this social context and how other school factors interact with different contextual factors is worthwhile.

Future research projects may incorporate more adolescent social contexts. For example, the influence of neighborhoods and socioeconomic circumstances and whether factors from these contexts are related to factors from the family, peer and school setting when predicting risky sexual intercourse behaviours.

Instead of adding more social contexts to the mix, another potential option would be to focus in more detail on the three adolescent social contexts chosen in this study. The analysis could include more risk factors within each social context. For instance, in the family context, what is the role of parent child communication? What happens when adolescents are in a family where open discussion about sexuality occurs? Researchers could also use a more inclusive definition of parental monitoring. In this project, monitoring is solely defined as knowledge of the child's whereabouts. According to the literature, parental monitoring also refers to knowing their child's friends and monitoring social activities (Small and Luster, 1994). Adding this dimension may produce very different results and also has the potential to increase understanding of peer influence, with parental monitoring as an intervening or moderating variable.

From the school context, there is merit in examining the role of the teacher-student relationship. For example, what, if any, influence can a close communicative relationship have for adolescents' general well-being and the likelihood that they will make informed and healthy sexual choices? As indicated in the literature, teacher-student relations reflect feelings of school connectedness. What role does high or low feelings of school connectedness have on risky adolescent sexual intercourse? What happens when

the family relationships are highly supportive or non-supportive? Do these family and school factors predict risky sexual intercourse?

In the peer context, further exploration in peer social networks would be beneficial. Categorizing adolescents based on their peer group experiences may shed more light as to what mechanisms within the peer context influence risky behaviour. For example, comparing peers that congregate with friends involved in church groups or sports and other recreational activities with those peers that associate with friends less likely to have any extracurricular involvement. Are any of these factors related to risky sexual intercourse? How do these factors interact with peer encouragement of risky behaviours? When the adolescent reports low school connectedness but high involvement in extracurricular activities, will these factors predict risky sex?

The condom use findings in this study are interesting. Considering cumulative risk is not predictive of condom use but specific risk factors are indicates to this researcher that there are other risk factors at play when attempting to predict this sexual intercourse behaviour. Further studies should utilize a more inclusive definition of condom use where the adolescent is able to choose from more than two responses. Exploring the social ecology of adolescents that report using condoms sometimes with those that report consistent use or inconsistent use is worthwhile. Also, more relationship questions and questions about different contraceptive methods would be beneficial.

While this project covers a broad range of risk factors, it touches only the surface of the potential interactions and influences of risk factors within and between adolescent social contexts for adolescents engaged in risky sexual intercourse. There is value in conducting future studies with an ecological framework in place.

Conclusion and Recommendations

Adolescent sexual health education is a priority in Canada. The need for more Canadian data on adolescent sexual behaviours, specifically risky sexual intercourse has been suggested in order to provide the most effective and successful prevention programs (Health Canada, 1994; Maticka-Tyndale, 1997). More Canadian research on risky sex is needed to further develop strategies to combat the rise of STDs in the Canadian adolescent population (McKay, 2000; Maticka-Tyndale, 2000) and to further understand the risk factors and social contexts that foster risky sexual behaviours.

Adolescence may represent a time when sexual behaviour patterns become established. Effective prevention activities may decrease the chance of unintended teen pregnancies and the transmission of STDs, some of which have no known cure.

The results of this study can inform adolescent prevention program planners. The high number of teens with an early age of first sexual intercourse and multiple sexual partners indicates the need for prevention efforts targeting students before the adolescent years when they are in elementary school. As well, prevention activities in junior high school are still a worthwhile endeavor.

Based on this data, promotion of primary and secondary prevention is recommended. As indicated in the literature, primary prevention involves activities from a public health perspective that aim to delay the initiation of sexual activity until psychosocial maturity. Secondary prevention entails increasing the use of safer sex practices by those who are already sexually active and who do not plan on abstaining from sexual activity (Kaplan, Feinstein, Fisher, Klein, Olmedo, Rome and Yaney, 2001).

The program components should emphasize peer group norms, with a special focus on peer risk behaviours and attitudes. Also, incorporating program evaluation is a

valuable aspect in the development of adolescent prevention programs. Evaluation findings will help shed light as to what prevention activities work the best and within what context. These opportunities will help pave the way for more focused research efforts. Considering the many social, emotional and physical hazards involved with adolescent risky sexual intercourse, continued research in this area is vital.

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APPENDICES

Appendix 1: Questionnaire

Answer A, B, C, or D, for each question on this page…

A - Strongly Agree
B - Agree
C - Disagree
D - Strongly Disagree

Parenting practice- Parental support:

#24) My parent(s) care about me very much
#26) I enjoy spending time with my family
#27) What my family thinks of me is very important
#28) My family supports me in the decisions I make
#29) I can talk to my mother/father about anything
#30) My parent(s) trust me

Parenting practice- Parental monitoring:

#25) My parents keep track of where I am

For the next question answer A, B, C, or D…

Peer group norms- Peer risk

#78) I would do something risky if my friends asked me to

A) Never
B) Rarely
C) Sometimes
D) Most of the time
E) Always

Peer group norms- Peer support

#85) Is there support among your friends to <u>not</u> have sexual intercourse?

A) No support
B) A little support

C) A moderate amount of support
D) A lot of support
E) My friends do not talk about having sexual intercourse

For the next question answer A, B, C, or D…

Academic aspirations:

#3) How far do you plan to go in school?

A) I plan to finish high school but not to go on after that
B) I plan to go to a trade school or vocational school after high school
C) I plan to go to college after high school
D) I plan to go to university
E) I plan to quit school as soon as I can

For the next question answer A, B, C or D…

Academic performance:

#4) what is your present academic average?

A) 80-100%
B) 65-79%
C) 50-64%
D) 49% or less

Appendix 2: Item Scale Correlation for the Parental Support Scale

		My parents care about me very much	I enjoy spending time with my family	My family supports me in the decisions I make	I can talk to my mother/ father about anything	My parents trust me	What my family thinks is very important
My parents care about me very much	Pearson correlation	1.00	.537	.534	.326	.531	.450
	N						
	Sig (2 tailed N)		.000	.000	.000	.000	.00
	N	471	469	471	469	469	469
I enjoy spending time with my family	Pearson correlation	.537	1.000	.560	.450	.463	.548
	N						
	Sig (2 tailed N)	.000		.000	.000	.000	.00
	N	469	474	474	472	472	473
My family supports me in the decisions I make	Pearson correlation	.534	.560	1.00	.484	.518	.497
	Sig (2 tailed N)	.000	.000		.000	.000	.000
	N	471	474	477	475	475	474
I can talk to my mother/father about anything	Pearson correlation	.326	.450	.484	1.00	.399	.402
	N						
	Sig (2 tailed N)	.000	.000	.000		.000	.000
	N	469	472	475	475	473	472
My parents trust me	Pearson correlation	.531	.463	.518	.399	1.00	.364
	N						
	Sig (2 tailed N)	.000	.000	.000	.000		.000
	N	469	472	475	473	475	472
What my family thinks is very important	Pearson correlation	.450	.548	.497	.402	.364	1.00
	N						
	Sig (2 tailed N)	.000	.000	.000	.000	.000	
	N	469	473	474	472	472	474

Appendix 3: Component Matrix for the Scale Construction of Parental Support

	Component 1
I enjoy spending time with my family	.640
My parent(s) care about me very much	.573
What my family thinks of me is very important	.524
My family supports me in the decisions I make	.653
I can talk to my mother/father about anything	.446
My parent(s) trust me	.529